

Welcome to GSA Fleet's Desktop Workshop



Audio: Everyone is automatically muted. Listen via your computer audio if possible.



Presentation & Certificate: You can download a copy of the presentation at <https://www.gsa.gov/gsa-fleet-training>

Additionally, a copy of the presentation along with a certificate will be emailed after the session.



Questions: Use the Q&A window to ask questions at any time. You may get a typed response or it may be answered aloud at the end of the presentation.



Recorded: The session will be recorded.

Recordings of GSA Fleet Desktop Workshops are available at: <http://bit.ly/DtWRecordings>

The slide features a background image of a person's hands writing on a tablet with a stylus, with a small blue toy car on the surface. The title "EVSE Showcase" is prominently displayed in large blue letters, with a large blue arrow pointing towards it from the left. Below the title, "Session 1" is written in a smaller blue font. The names of the participating companies are listed in orange italics. Decorative orange and blue geometric shapes are in the top-left and bottom-left corners.

EVSE Showcase

Session 1

*Apollo Sunguard, Beam Global,
Verdek, WSP, Eaton, ABM & Ameresco*

You can download a copy of this presentation at: <https://www.gsa.gov/gsa-fleet-training>

BPA Award Highlights

- Includes hardware, software, O&M, make-ready/site assessment services & more!
- Contract Length: 60 Months
- 16 offerors were awarded, including 9 small businesses
- Over 30 EVSE brands and 1,165 line items
- Onboarding Opportunities
- GSA installation Contractors can buy from FAS BPA holders creating a 1 stop shop for stations & installation.
- View all GSA EVSE offerings, pricing and BPA-holder information at gsa.gov/electrifythefleet



What's on the BPAs?

Services

CLIN 0006

Site assessment
Validation
Permitting
Basic installation
Utility coordination
Wiring
and more

Hardware

CLINs 0001, 0002,
0003, & 0011

Level-1 Charger
Level-2 Charger
DC Fast Charger
Solar Charging
Portable Charging
Accessories

Management Software & Network Plans

CLINs 0007 & 0008

Power management
Network plans
Real-time analytics
Data plans
Cloud software

Warranty and O&M Plans

CLIN 009

Parts-only
Parts & labor
Onsite repair
Replacement
1-5 year coverage

Charging as a Service

CLINs 002, 003, &
010

Assembly
Activation
Ongoing operator &
driver support
Charging data &
analytics
Power management,
and basic installation

Agenda

- ❑ **Apollo Sunguard:** Presented by [Carolyn Riddle](#), [Matt Bianco](#)
- ❑ **Beam:** Presented by [Sandra Peterson](#), [Matt Bianco](#)
- ❑ **Verdek:** Presented by [Guy Mannino](#)
- ❑ **WSP:** Presented by [Denise Roth](#), [Dana Lowell](#)
- ❑ **Eaton:** Presented by [Marissa Pilcher](#), [Jim Dankowski](#),
and [John Vernacchia](#)
- ❑ **ABM:** Presented by [Thomas Wray](#)
- ❑ **Ameresco:** Presented by [Trevor Smith](#), [Scott Kaptur](#)





Shaded EV Charging



Matt Bianco, President, FedWay Consulting, LLC

Kevin Connelly, President, Apollo Sunguard

Carolyn Riddle, EV Charging Lead, Apollo Sunguard

Patricia Mowrey, EV Charging Account Executive, Apollo Sunguard



BPA #47QMCA22A0003

Successful POV Charging Programs (below) & Fleet Customers (Right) :

DoD Agencies

- Army (Fort Benning/Fort Irwin)
- Navy Exchange

Civilian Agencies

- Southern Arizona VA Health Care
- FDA (White Oak Campus)
- FBI (Several sites nationwide)
- National Energy Technology Lab (2 sites – PA & WV)
- NPS (Various Parks)
- EPA (Research Triangle Park)

GSA Examples

- Region 9 (Various Sites)
- Denver Federal Center
- DHS HQ – St. Elizabeth's

3,000+ charge ports | 100+ agencies | 3 BPA's (2014)



EV 101: Connectors



J1772

AC North America



Tesla



SAE Combo



CHAdeMO

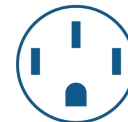
DC North America



NEMA 15



NEMA 20



NEMA 50

Residential Outlets North America



Type 2

AC Europe



CCS2

DC Europe

EV 101: Levels of Charging

“Level 1”



NEMA 15

3-4 RPH

“Level 2”



J1772

16-25 RPH

“DC Fast”



Tesla



SAE
Combo



CHAdeMO

200-500 RPH

No single
standard

“RPH”= maximum Range recovered Per Hour of charging

Global and flexible charging hardware portfolio




AC

DC

7.4kW

**7.4-22kW
80A max**

**62.5-125kW
200A max**

**80-160kW
250A max**

**Up to 500kW
500A max**

ChargePoint: Comprehensive Portfolio

Software

+



- + Access control: Who can use the stations and when
- + Pricing: Site host can choose to set fees
- + Waitlist: Drivers can get in line when all ports are occupied
- + Scheduled charging
- + Power sharing to maximize ports while avoiding costly upgrades
- + Proactive and remote diagnosis
- + Power management to avoid demand charges

Hardware

+



- + Solutions for every use case, all vehicle types and brands
- + High efficiency in power and footprint
- + Modular, scalable, secure architecture designed for serviceability
- + Unparalleled quality: advanced testing (vehicle, functional, climate, environment) for long-term reliability
- + Options for site hosts to use custom branding

Services



- + Accurate site qualification, quality site preparation and professional installation
- + Nationwide network of O&M partners
- + Initial activation and configuration services
- + Standard warranty coverage for one year
- + ChargePoint Assure maintenance and management program
- + Station owner phone support during business hours
- + 24/7 driver support in multiple languages

Most Advanced Charging Software and Services



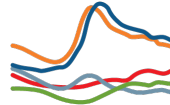
Dashboard & Analytics

Station owners see how stations are being used and when it's time to add capacity.



Waitlist

Drivers can get in line and get notified when a station is available, improving utilization.



Energy Management

Efficiently and automatically utilize power available for charging vehicles. Save money on costly upgrades and avoid demand charges.



Flexible Pricing

Price by hour, kWh, time of day, customer type or any combination.



Access Control

Limit who can use the charging stations and when. Station owners can disable charging during "closed" times.



Fleet Services

Fleet managers can track vehicle charging and pay for electricity if the vehicles need to charge at other stations. WEX integration for easy payment.



Driver Services

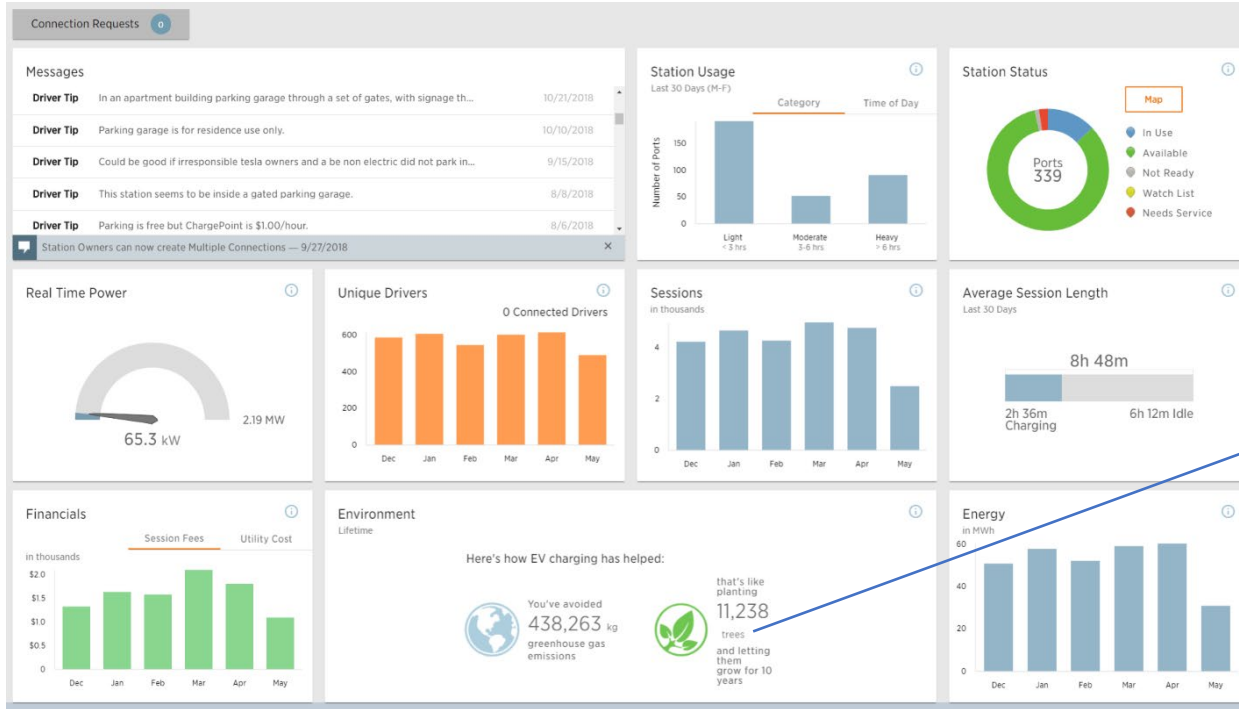
Automatically notify drivers of a full charge, available station, changes in power and more.



APIs

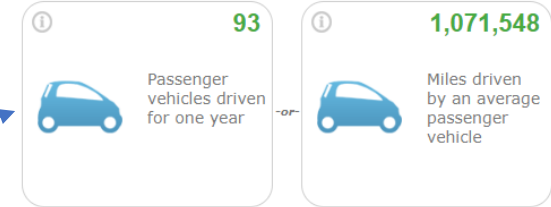
Most functions are also available through SOAP/XML and REST APIs that follow the same data access rules as the UI.

Network Manager Dashboard



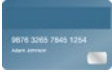
The sum of GHG gas emissions is equivalent to

Greenhouse gas emissions from



The Network Manager portal gives access to metrics to measure the stations success

Ecosystem Partners to Integrate With Your Fleet Operations



*Fleet Card /
Fuel Management System*



*Fleet Operations
Software*



*Vehicle
Telematics*



ChargePoint Assure Proactive Maintenance & Warranty

Industry leading parts and on-site labor warranty **allowing you to focus on leasing & resident satisfaction**



Key Benefits:

- + Proactive Monitoring
 - ChargePoint often knows about a problem before the host and will contact the host for proactive repairs
 - Proactive support and reliability with virtually no administrative efforts or unexpected costs annually
- + Includes all Parts and On-Site Labor to repair or replace product defects
 - One business day on-site response or one business day from parts delivery. ChargePoint assumes all triage and repair coordination responsibilities
- + Monthly and quarterly reporting/analytics emailed to station owners
- + 98% Annual Uptime Guarantee with *non-performance penalties*

* Purchase and successful completion of Site Validation Service is required to enable ChargePoint Assure coverage

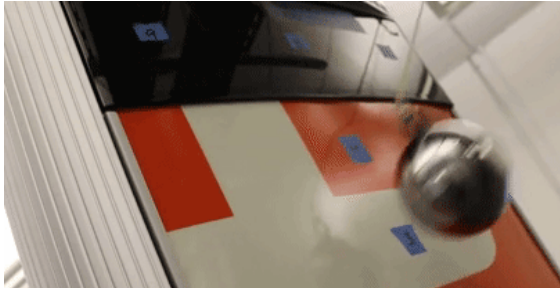
Commitment to Safety and Quality

- 16,000 square feet
- 2MW power budget
- Close to CP headquarters

Test Lab Capabilities		
Temperature Stress	Connector Cycling	Solar Loading
Humidity Stress	Cable Load	Dust and Salt Exposure
Wind Resistance	Swingarm Cycling	Long Term Load Stress
Water/Rain Exposure	Drop Impact (package)	Drop Impact (system)
UV Exposure	Dynamic Impact	Vibration (seismic, random)



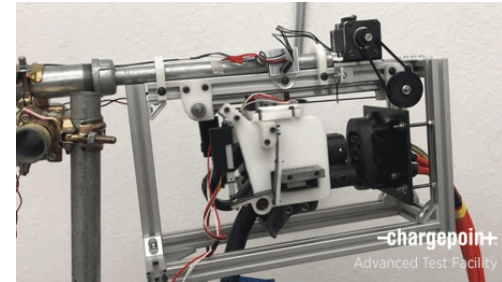
Impact Testing



Solar Load and UV Exposure

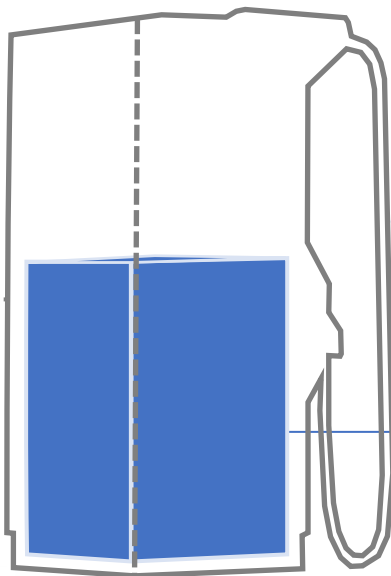


Connector Cycling



Fast Charging Made Simple

<https://youtu.be/zwrwwMJwh64>



Boost Charger features integrated energy storage technology that significantly reduces installation & ongoing costs



150 kW fast charging
connectors compatible with all EVs

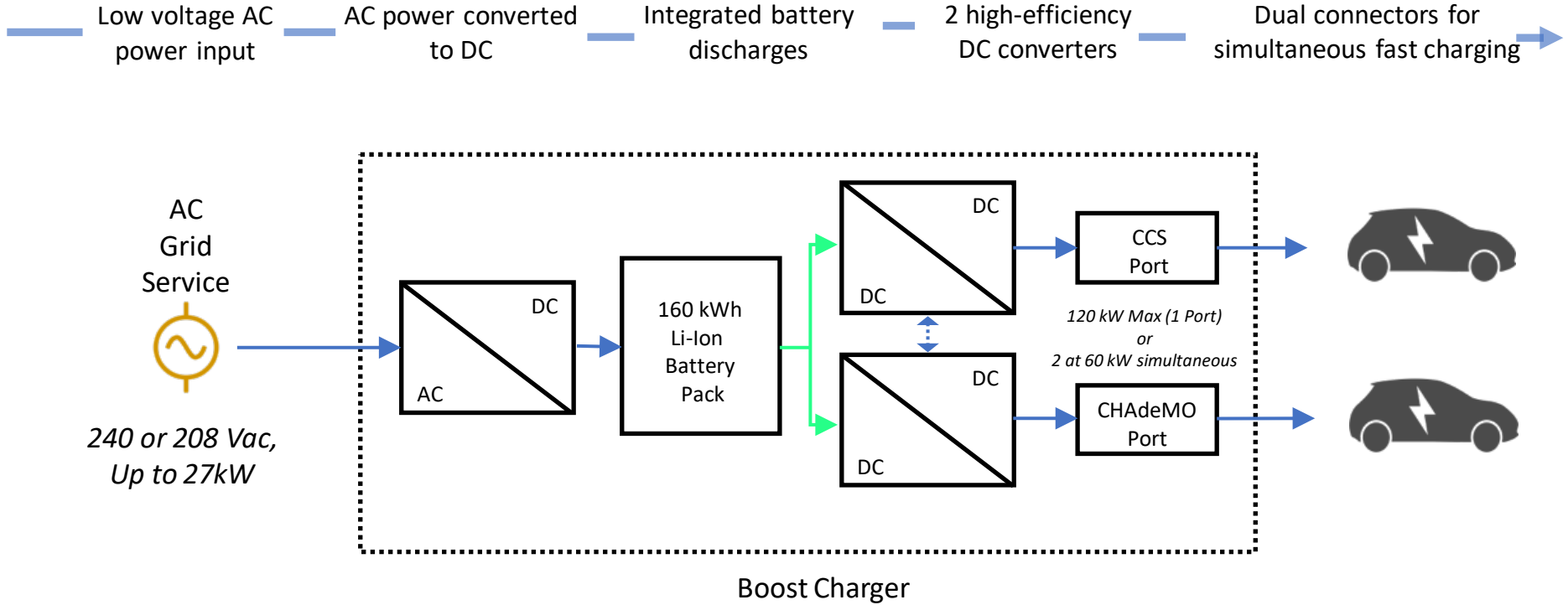


160 kWh lithium-ion energy storage boosts power from the grid to EVs



Low-voltage grid connection requiring no infrastructure upgrades

How it Works



Services for Planning, Installation and Ongoing Support

- Site Assessment, Scoping and Project Management
 - Accurate site qualification, quality site preparation and professional installation
 - Nationwide network of O&M partners who provide setup services
 - Initial Activation and Configuration service provides a specialist to consult directly with station setup and activation
- Ongoing Service Support
 - Standard warranty coverage for one year; includes parts only when installed by ChargePoint dealer
 - ChargePoint Assure is the industry's most comprehensive EV charging station maintenance and management program
 - Station owner phone support during business hours
 - 24/7 driver support in multiple languages



Support Your Electrification Process

Phase I

Analysis and
Planning

Preliminary
Design

Phase II

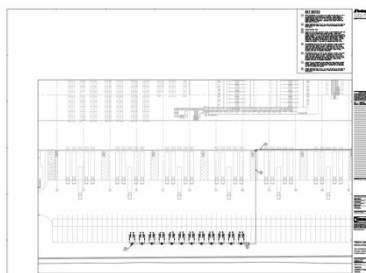
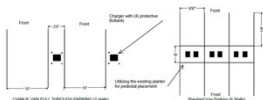
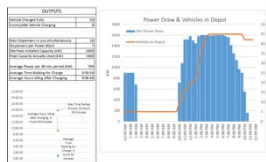
Final
Engineering
Design

Permitting /
Construction

Phase III

Utility
Energization

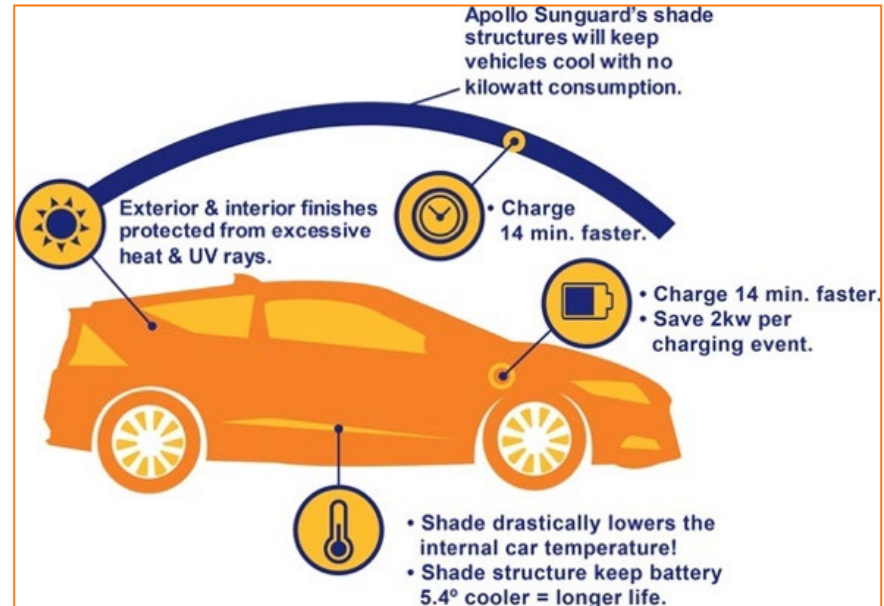
Activation &
Training



- + Full project services to ensure success of your program
- + We manage the process and the details, so you don't have to
- + Leverage ChargePoint's nationwide network of contractors or we can work with your own

Why Shade EV Charging?

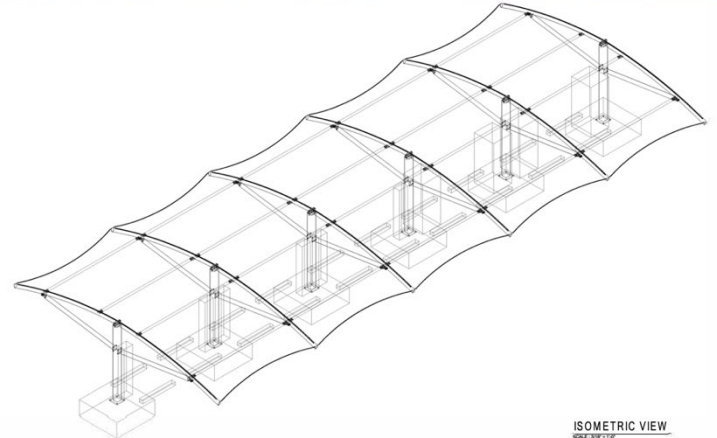
- + Charge vehicles up to 14 minutes faster
- + Consume less KW energy to charge
- + Require less maintenance for the charging station
- + Protect vehicles from internal/external sun damage
- + Testing has shown when vehicles are parked under shade as opposed to parking in the direct sun, internal temperatures can be lowered dramatically in some cases as much as 100°F
- + Parking lot shade structures work best if planned in tandem with the planting features of the lot. Trees and shades can work together to shade the lot throughout the day as the angle of the sun changes.
- + Shade structures can also be equipped with lighting systems, surveillance devices, solar panels and EV charging stations.
- + The sun's heat has proven to impair battery function for electric vehicles. Electric vehicles charging in direct sunlight can require up to 2kW more power to become fully charged.



Shaded EV Charging:



SAMPLE STRUCTURE SHOWN



ISOMETRIC VIEW



Thank You!

For further information,
feel free to reach out to us:

Carolyn Riddle
EV Charging Lead
Apollo Sunguard
carolyn@apollosunguard.com
(941) 713-4678

Matt Bianco
President
FedWay Consulting, LLC
mbianco@fedwayconsulting.com
(571) 643-1505





FedWay Consulting

Clean EV Charging for Federal Agencies

Matt Bianco

President

FedWay Consulting, LLC

Speaker Intro – Matt Bianco, FedWay Consulting, LLC

- Matt is based in the DC metro area and worked for ChargePoint from 2014-2019. He now works independently as FedWay Consulting, LLC on integrating/supporting and procuring EV charging technology for the Federal Government. Matt supports Beam Global assisting agencies in pursuit of both off-grid and on-grid EV charging infrastructure.
- Matt has worked with GSA & ChargePoint on two Blanket Purchase Agreements (BPA's) dating back to 2015 in support of EO #13693 to “green” the fleet. Now is focused on EO #14008 and EO #10457 and a third BPA.
- Matt has implemented stations/programs for Agencies for both Fleet EV's-Government Owned Vehicles (GOV) and Personally Owned Vehicles (POV) on Federal sites and has become a thought leader on the implementation of EV charging stations/programs to align with FAST Act.
- Matt has been a key part of starting these programs in the Military, Civilian and Intel Agencies.

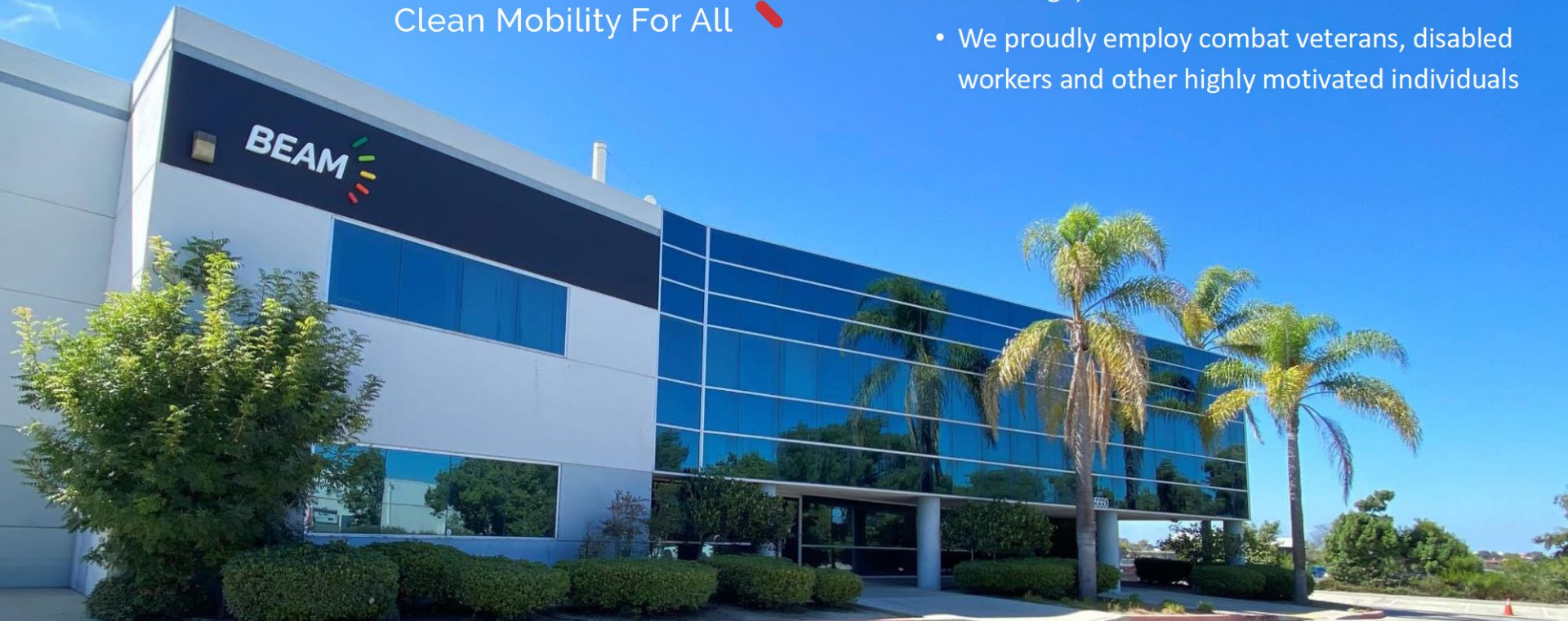




BEAM

Clean Mobility For All

- Founded in 2006
- Publicly Traded Company (Nasdaq: BEEM)
- Products manufactured at our facilities in San Diego, California
- We proudly employ combat veterans, disabled workers and other highly motivated individuals



Get the EV Charger of Your Choice, Deployed in Minutes not Months



No Permitting



No Construction

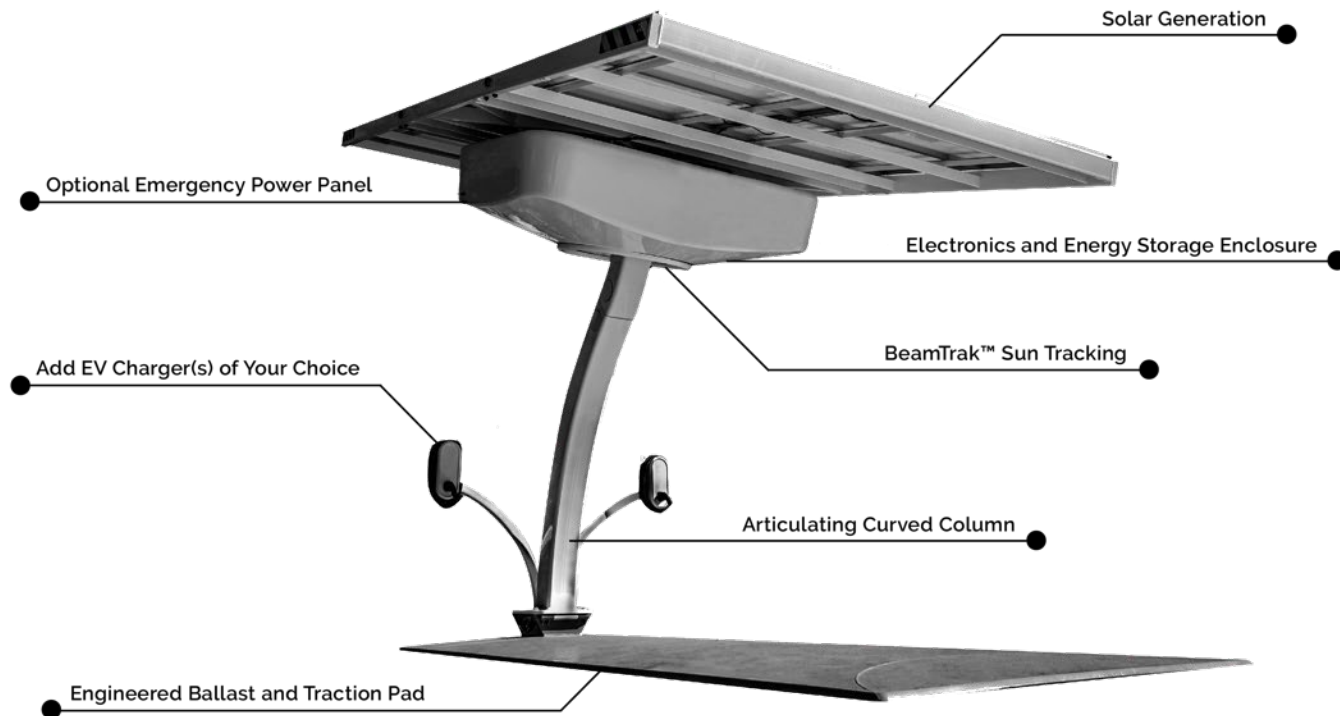


No Electrical Work



No Utility Bill

EV ARC™ 2020



Installing Grid-Tied EV Charging Includes

- Engineering
- Construction
- Trenching
- Foundation
- Permitting
- Electrical circuit work
- Project management
- Transformer / switchgear upgrades
- Utility metering / monthly bills
- Utility interconnect agreements
- Demand charges
- Carbon Footprint



EV ARC™ 2020

Solves Your Problems

No Permitting, No Construction, No Utility Bill

- Fastest and easiest to deploy solution on the market
- The EV charger brand and service of your choice
- Deploys in minutes, zero-contact delivery
- Avoided costs = Lowest total cost of ownership (TCO)
- Transportable
- Off-grid EV charging and emergency power
- Highly visible sustainability initiative
- Drive on Sunshine



EV ARC™ 2020

Fits in a Standard Parking Spot

- Maintain full parking capacity
- Cars park on the base pad
- ADA compliant
- Reach as many as 12 parking spaces
- Charge up to 6 vehicles at the same time



EV ARC™ 2020

Transportability = Flexibility

Drop and charge. Can be moved any time.

- Permanent yet transportable
- Scalable
- Can be moved short distances with a forklift
- Can be moved longer distances with the ARC Mobility™ Trailer, truck or in a 20 ft. container
- Ideal for leased or owned properties

<https://vimeo.com/466705736>



EV ARC™ 2020

Off-Grid Emergency Power

Energy when and where you need...

- Charge during blackouts, utility outages, weather events
- Relocate to high risk locations, hospitals, shelters...
- Wind-rated up to 120mph
- Flood-proof up to 9.5 feet
- Working asset during prosperity and emergencies
- Integrated emergency power panel



Emergency Preparedness for First Responders

EV charger becomes a lifesaver

- Generators sit idle in storage most of the time
- Renewable power: No refueling
- Clean power: No toxic emissions
- Quiet power: No disruption for medical staff or patients
- Safe power: No volatile fuel to transport or store
- Included in FEMA's Authorized Equipment List (AEL)

** Beam Global EV ARC™ solar-powered charging stations are included in the FEMA Authorized Equipment List, under designation 10BC-00-SOLR Chargers.*





USMC Configuration:

- EV ARC 2020 w/ Dual Port ChargePoint unit mounted
- Boost Battery (43 kWh)
- Emergency Power Panel
- One year of ChargePoint network
- One year of Beam Remote Monitoring (RMMS)

Beam EV ARC Procurement

- GSA MAS Contract:
https://www.gsaadvantage.gov/ref_text/47QSWA21D0006/0VSTA7.3RJ68Y_47QSWA21D0006_47QSWA21D0006.PDF
 - BPA Contract #47QMCA22A0004
- CONTRACT NUMBER: 47QSWA21D0006
- CONTRACT PERIOD: November 1, 2020 – October 31, 2025
- CONTRACTOR: Envision Solar International, Inc. 5660 Eastgate Dr. San Diego, CA 92121-2816 Phone: (408) 691-0343 Fax: (858) 799-4583 <https://beamforall.com/>



Thank You!

For further information,
feel free to reach out to us:

Matt Bianco

mbianco@fedwayconsulting.com

+1.571.643.1505



FedWay Consulting



Powering Sustainable Transportation

www.verdek.com

EV CHARGING

ELECTRIC
VEHICLES

RNG/LNG
VEHICLES

RENEWABLE NATURAL
GAS LNG FUELING
EQUIPMENT

SALES, INSTALLATIONS, AFTER SALES
SERVICE



BUSINESS MODEL

- Turnkey Solutions
 - Engineering, Permitting, Installation, Service, Training, Station monitoring.
- Nationwide network of local and trained installers to comply with the local code.
- Engineering services for the more demanding projects
- Ongoing stations monitoring with after sales service and technical support

Leading the EV Trends

- Bigger Battery Packs / Higher Power Density
 - First Leaf 24KWH
 - Tesla 100KWH
- Faster chargers and higher voltage (400 to 800 Volts) to meet the market demand
- Strong Growth in Commercial Fleet and Public Transportation- New installation 2-3MW

Level 2 7 KW



2010

2014



Level 3 50 KW



Level 3 62 KW



2018



Level 3 up to 450 KW



2022



Lagrangeville NY

350 KW



JFK NY

125KW



Luning NV

50 KW



CLIN 001 EVSE Level 1

Webasto TurboDX



WEBASTO

- Non-Network Charger
- 16A and 32A
- Available as single dual or quad

CLIN 002 EVSE Level 2

PUBLIC CHARGERS

CHARGEPOINT
3.6-7.2KW



Chargepoint and EvoCharge
-Networked
-Single or Dual
-Power Management
-Retractable Cord

FLEET

CHARGEPOINT
7.2-15KW



CLIN 003 EVSE Fast Charge

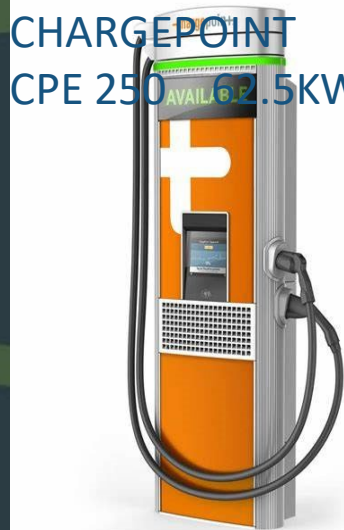
PUBLIC CHARGING



ABB Terra HP 175/350



CHARGEPOINT
CPE 250 2.5KW



FLEET CHARGING

ABB Terra HVC 150



Terra 54 Terra Wall 24



ABB DCFC 24KW to 450KW

ChargePoint
62KW to 500KW



CLIN 003 EVSE Fast Charge



FREEWIRE BOOST

- Battery-integrated design for easy connection to existing electrical infrastructure without costly construction and complex permitting.
- It can use 240V 1Ph, 208 3Ph
- It has 160KWH battery pack
- Ultra fast charging -up to 600 miles per hour
- Outputs up to 950 V for light/heavy-duty EVs
- Dual simultaneous charging and customizable port configurations including CCS1/CCS1 or CCS1/ CHAdeMO

CLIN 004 EVSE Solar Off-Grid

Ultrafast EV Charger with Integrated Storage 160KWH capacity, 150KW output Dual CHAdeMO and CCS Combo, 16KW Solar Array, 120 KWH Battery Storage





CLIN 006 Site Planning & EVSE

Activation of the chargers listed in CLIN 002, 003, 004 and 005

Verdek activates the chargers and once online arranges a training session for the station managers/users

CLIN 007 Power Management

AMPLY POWER – FLEET MANAGEMENT



AMPLY Power's OMEGA is a cloud-based intelligent charge management systems
It monitors:

- EV chargers
- Auxiliary meter
- Vehicle telematics

Key Features

- Charging can be automated and optimized
- Software can navigate electricity costs that fluctuate on an hourly basis and orchestrate charging sessions to ensure vehicles are charged with low-cost energy and ready when needed.



CLIN 008 Network Plans

NETWORK LICENSES
OCPP COMPLIANT

- Chargepoint
- EV Connect



CLIN 009 Operations Repairs & Maintenance

EXTENDED WARRANTIES

- Part
- Parts and Labor
- To be purchased with the chargers



Accessories & Components

SUPPORTING PARTS

- Retractable Cord
- Bollards
- RFID Cards
- Concrete Pad Kits



Contact Us:
info@verdek.com
+1 (888) 336-3734

www.verdek.com



Zero Emission Fleet

June 2022



Question today
imagine tomorrow
create for the future



Agenda

- 1 Who is WSP?
- 2 What ZEV-related services does WSP offer?
- 3 Examples of our recent work
- 4 How can WSP help under GSA fleet assistance program?

WSP USA

- One of world's leading technical service firms
- Engineers, advisors, technicians, scientists, architects, planners and construction management professionals
- **12,000+** employees in **200** offices across the U.S.

*We partner with our clients
to help communities prosper.*



Our integrated **services**



Transportation



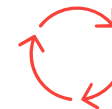
**Property +
Buildings**



Energy



**Water +
Environment**

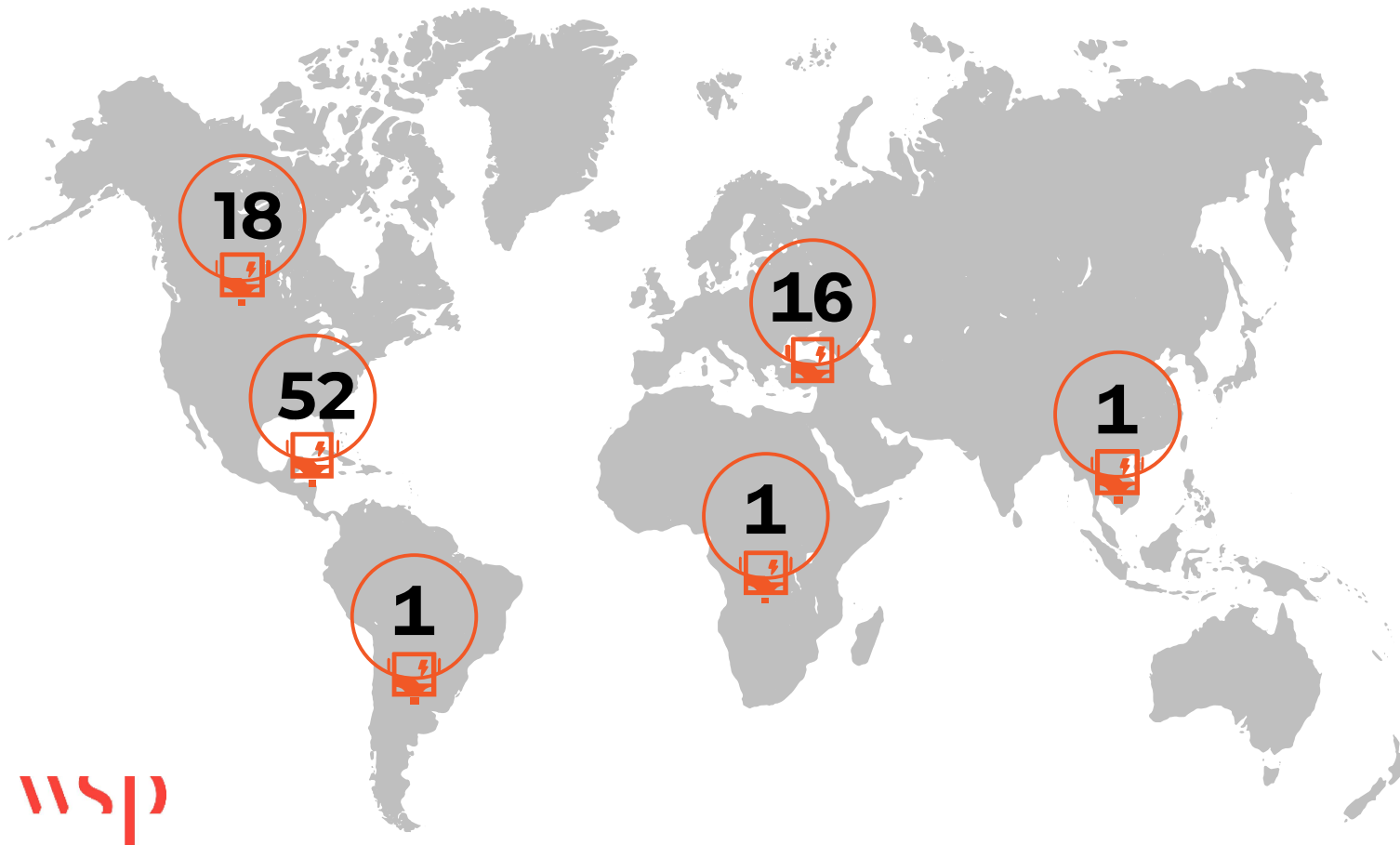


**Program
management**



Advisory

Global ZEV experience



80+

ZEV projects
worldwide

800+

Facilities designed

17k+

Vehicles included in ZEV
master planning

5k+

Vehicles included in detailed
infrastructure design

ZEV

Clients
10 of 25 largest us public
transit agencies

Recent ZEV projects



Los Angeles, California

2,200 transit buses
11 bus depots

Program masterplan for 100% ZEV by 2030

- Technology evaluation
- Infrastructure design and phasing
- Procurement support

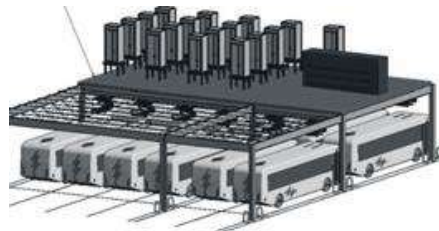


Baltimore, Maryland

780 transit buses
4 depots

Fleet transition plan for 95% ZEV by 2045

- Assess existing conditions
- Route energy modeling
- Alternative delivery procurement support



Global Fleet

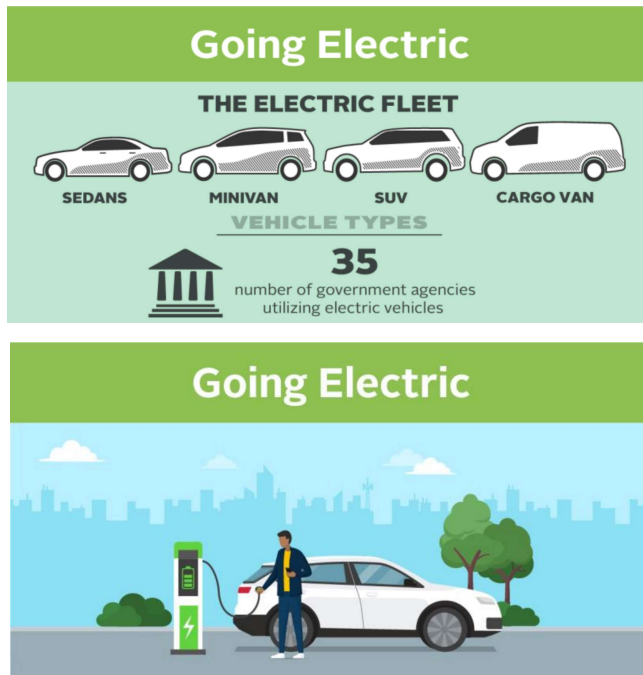
1,600 LDV and MHDV
25 campuses in **15** countries

Program management for 100% ZEV by 2030

- Fleet operational database
- Commercial ZEV database
- Regional operations and infrastructure plans



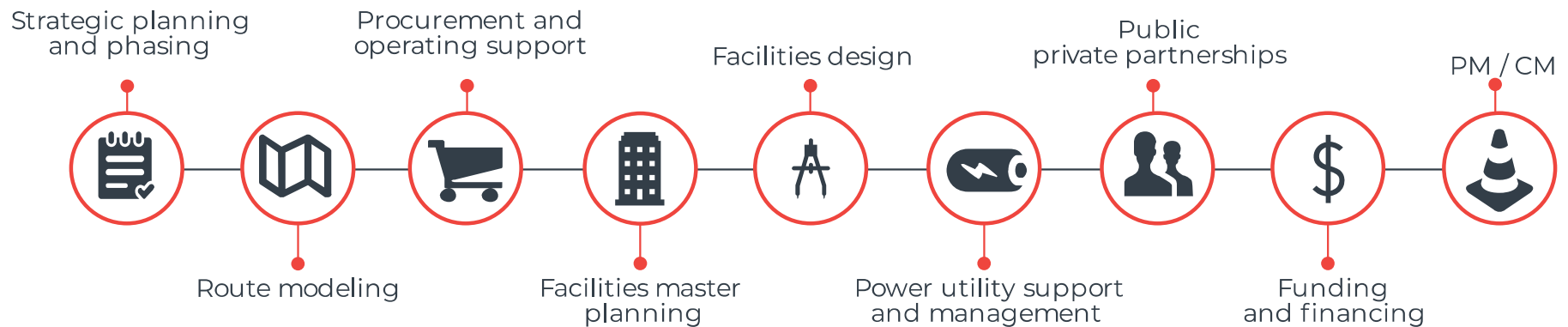
GSA's electric fleet assistance to agencies



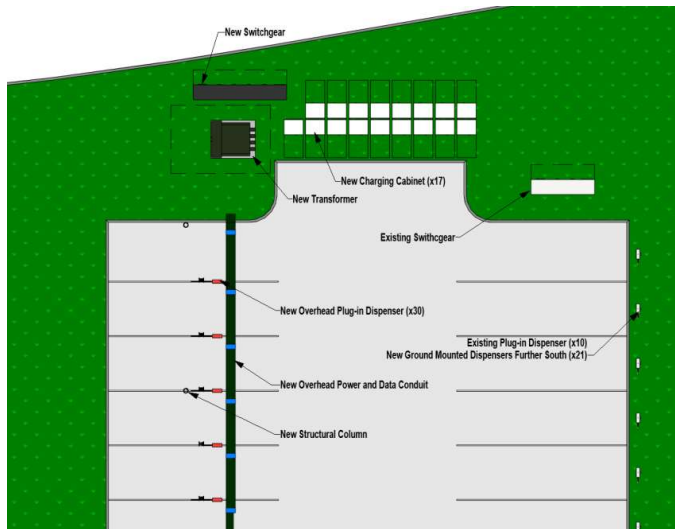
- WSP awarded a GSA Blanket Purchase Agreement (BPA)
- BPA covers fleet electrification services for planning, purchase and installation of EVSE
- Agencies eligible to access GSA schedules can use BPA to procure WSP services
- Agency Contracting Officer can issue task order to WSP using procurement forms (SF1449, OF347, GSA300)

WSP EV fleet services under GSA BPA

Serving fleets of all types every step of the way.



How can WSP help?



EV strategic planning

- EV procurement schedules
- Route energy modeling
- Facility energy and load analysis
- Climate, air quality/public health, and equity analysis
- Capital and operating cost estimates
- Organizational transformation and change management

Facility master planning

- Charging infrastructure conceptual design
- ZEV program phasing
- Facility construction phasing
- Resiliency planning

How can WSP help?



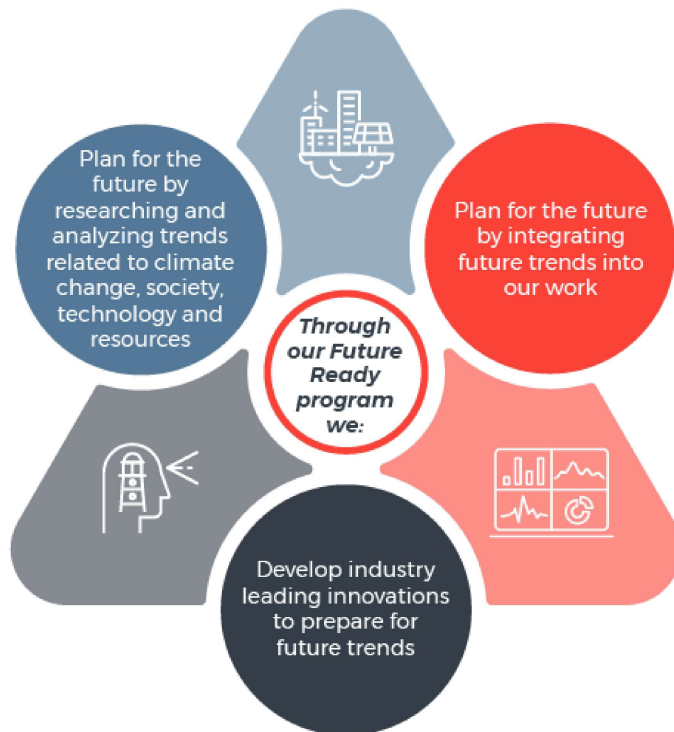
Facility design

- Final design and permitting
- Utility coordination
- Construction cost estimates
- Construction management

Procurement and operating support

- Alternative procurement or project delivery strategies
- Service planning and scheduling
- Workforce planning and training
- Vehicle and facility maintenance program planning
- Safety protocols and emergency plans

WSP is Future Ready TM



Fuel cells

- Rolling stock: trains, trucks and buses

Micro grids

- Clean local energy
- Cost optimization
- Resiliency

Automated solutions (CAV)

- In-depot: park, hail, wash and charge
- In-service: platooning, advanced driver assistance and detection

<https://www.wsp.com/en-US/insights/transitioning-to-zero-emission-technology>

Your WSP team



Denise Turner-Roth

EVSE Consulting Services
Director

- Former administrator of the GSA (2015-2017) and current President of WSP's U.S. Advisory Services Group
- Leads a consulting practice of 500+ industry-leading professionals providing offerings and more to the nation's infrastructure providers in transportation, energy, buildings, water and the environment
- Served as city manager of Greensboro, NC, where she led reorganization of city departments to promote efficiency and better services



Dana Lowell

EVSE Consulting Services
Project Manager

- 25 years of experience in the transportation and government sectors
- Career-long focus on evaluating and implementing clean fuels, emission reduction and zero-emission technologies for fleet vehicles
- MBA and BS in Mechanical and Aerospace Engineering
- 7 years as Assistant Chief Maintenance Officer for Research and Development at Metropolitan Transportation Authority New York City Transit's Department of Buses

Your WSP team



Lance MacNiven, PMP, ENV SP
Route Modeling



Cliff Henke
Strategic Planning & Phasing



Jim Drayton, PMP
Procurement & Operating Support



Michael Martin
Facility Design



Philip Jonat, PE, CEM, PMP
Power Utility Support



Brian Renehan, LEED AP
Public-Private Partnerships (P3)

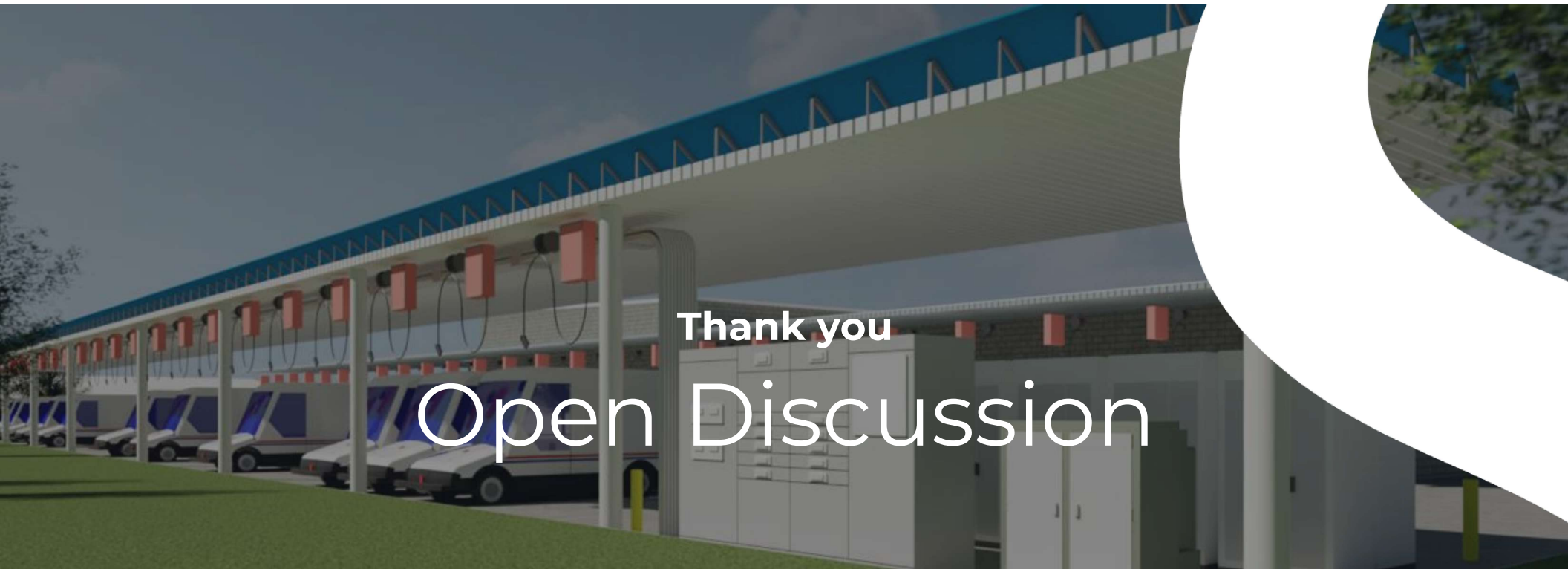


Auden Kaehler
Funding and Financing



Neil Weitman, PE
Program Management /
Construction Management





Thank you

Open Discussion



www.wsp.com



Comprehensive infrastructure solutions for Electric Vehicle charging

July 2022



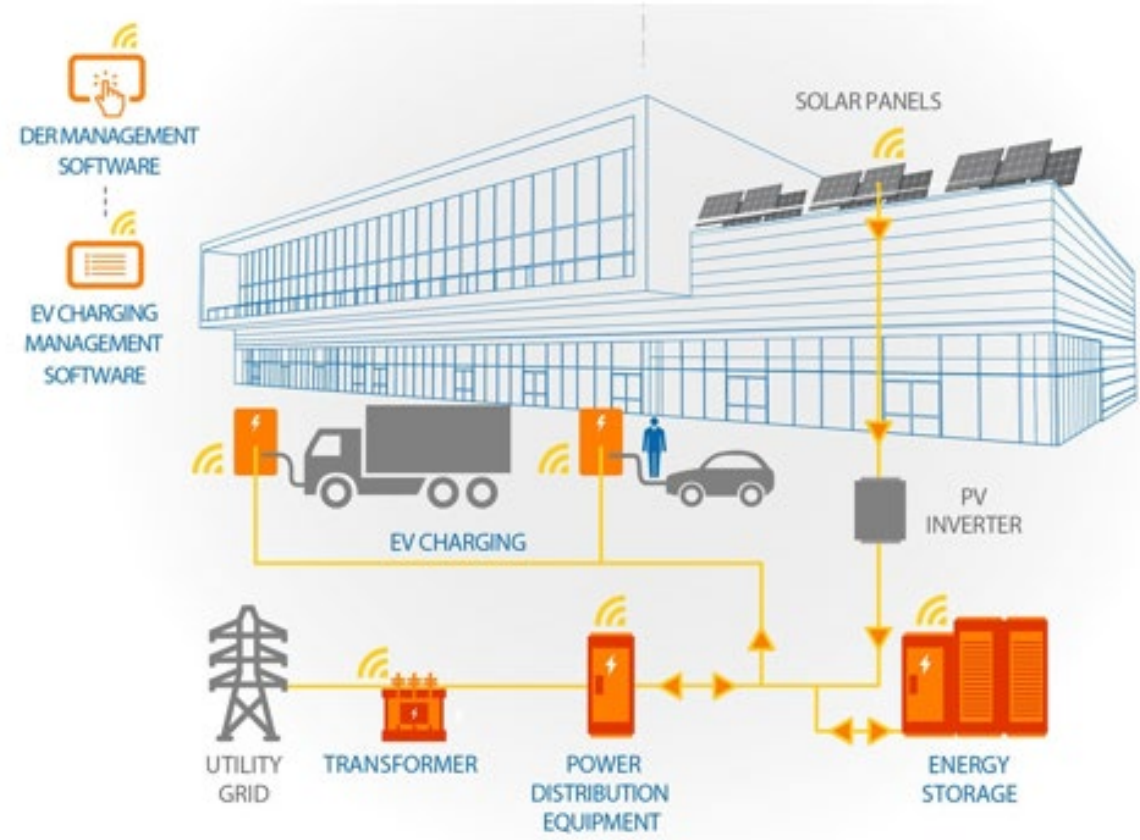
Powering Business Worldwide

© 2021 Eaton. All rights reserved.

Buildings require a comprehensive infrastructure solution to enable sustainable, resilient and cost-effective performance

Eaton's comprehensive EV charging infrastructure offerings will include equipment, software and engineering services solutions to meet EV charging project requirements.

- **EV charging**
AC Level 2 and DC Level 3 fast chargers for residential, commercial and fleet operations
- **Battery storage**
Eaton xStorage 400 Battery Energy Storage System (BESS) includes batteries, inverters and management software to shave peak demand cost for EV charging applications
- **EV charge management software**
Enables users to operate a network of charging stations, from charging point management and power management to financial rules
- **Microgrids and Distributed Energy Resource (DER) integration**
Incorporate local solar photovoltaics and other renewables into EV charging infrastructure to help meet sustainability goals
- **Power distribution equipment and grid connection upgrades**
Installation and upgrades of electrical equipment, including transformers, switchgear, switchboards, circuit breakers and battery storage
- **Electrical engineering services**
Includes feasibility analysis of planned EV deployment sites, power systems analysis of electrical infrastructure, electrical system conceptual design and configurations, system protection analysis and recommendations, automation and control solutions and turnkey electrical services



Powering Business Worldwide

We help customers integrate EV chargers, leverage renewable energy produced on site while managing the energy flows and planning power capacity.

AC products that meet your challenges

Product spotlight – Green Motion EV charger smart breaker



Installs directly in the loadcenter close to where the electric vehicle will be parked.



Installs directly into the loadcenter and includes a junction box for when the electric vehicle is parked further away.



Installs directly into the electric vehicle wallbox for additional versatility and more modern design.



Installs directly in both single or dual port pedestals to make charging more accessible in open parking areas.

- Maximum flexibility with multiple installation options
- Focuses on lowest cost Total Cost of Ownership (TCO) with simple installation & maintenance
- Enjoy fast AC charging at 7.7kW, 240Vac with revenue-grade metering accuracy ($\pm 0.2\%$ per ANSI C12.20)
- Open communication approach through cloud APIs and OCPP enables integration with your preferred charging management solution
- Load management capable
- The universal J1772™ charging connector is compatible with any EV meeting the SAE J1772™ charging standard
- UL listed and tested for electrical safety and features 20mA ground fault protection



Manage individual charging with ease

Product spotlight – Green Motion EV Driver app



- Residential app focused on the Electric Vehicle Driver
- Install and commission chargers
- Remotely start and stop charging sessions
- Schedule charging sessions during off- peak times
- Notifications for peace of mind
- View historical energy usage and amount saved by driving electric

Charging network manager powered by Brightlayer

Benefits



All-in-one software management

Eaton Green Motion Charging Network Manager (CNM) enables EV charging operators to:

- Manage users, access control and pricing
- Manage private and public EV charging stations, visibility and access rights
- Manage financial rules, energy costs and multichannel payments



Full control for seamless maintenance

Eaton Charging network manager enables seamless maintenance of EV charging stations:

- Notifications settings
- Remote charging stations troubleshooting capabilities
- Remote upgrade capabilities
- Remote EV charging stations restart



Advanced statistical data capabilities

EV charging stations network operators can easily access data to:

- Track energy consumption and EV charging station status
- Select the right payment methods according to their needs
- Access usage statistics and more



White Labeled back and front-end options

Eaton Charging network manager back and front-end are customizable for large installations (on request).



Powering Business Worldwide



Energy storage

Critical enabler for fast charging at depots,
in parking garages and on the highway

Energy storage to optimize EV fast charging without overloading power networks

Eaton xStorage 400 BESS

400 kW / 228 kWh rating

- 480V 60hz 3-wire + ground
- 200 kWh available through year 10
 - 1 cycle/day (3650 lifetime)
 - 100 kW charging power limit
 - -30°C to 50°C (122° F) external temperature

NEMA 3R outdoor enclosure with HVAC

- Dimensions (W x D x H): 11'3" x 5'7" x 10'3"
- Size of a parking spot

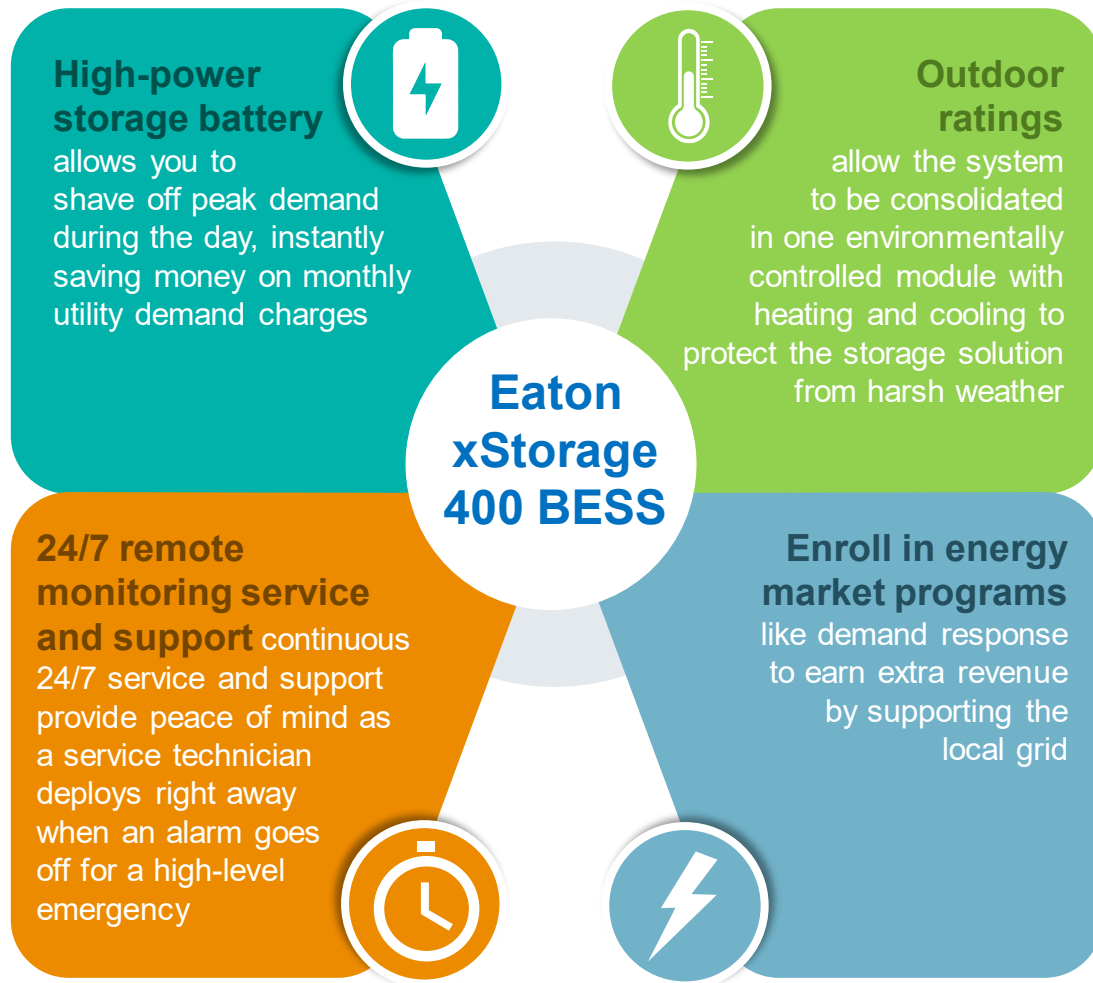


Spec sheet and quote available upon request

Certifications:

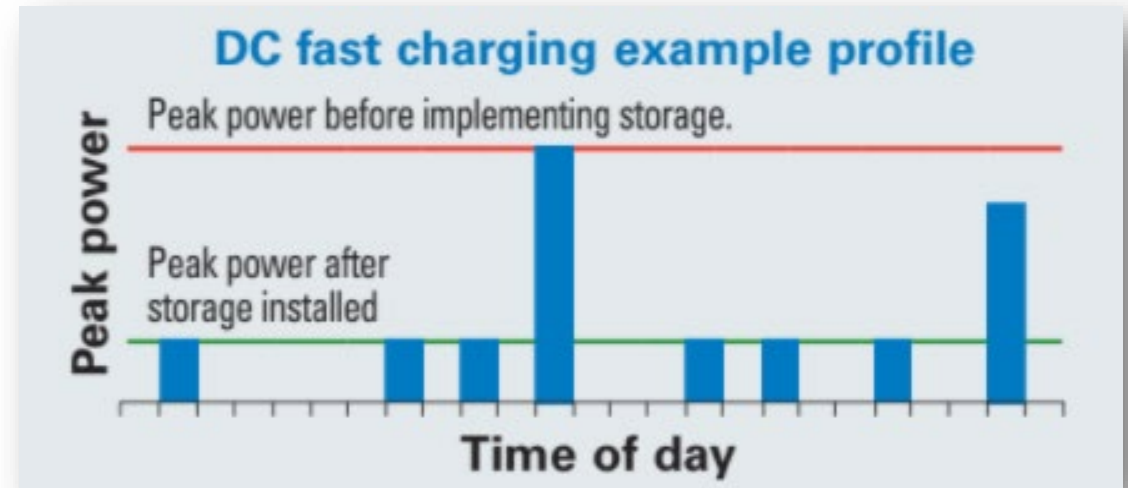
- UL 9540, 9540a
- UL1741, 1741SA
- UL 50, 50E
- NFPA 855
- NEMA 3R

Energy storage to optimize EV fast charging without overloading power networks



Application spotlight: EV charging

As shown in the chart below, Eaton's xStorage 400 allows a site owner to set the green line to desired maximum power so when a peak period starts, the system provides supplemental energy, rather than pulling the entire amount from the grid. The site owner gets instant savings on utility demand charges while providing a full-power charging experience. At the same time, the EV owner gets a quick and convenient charge.

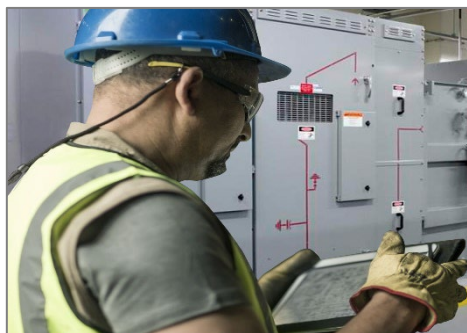
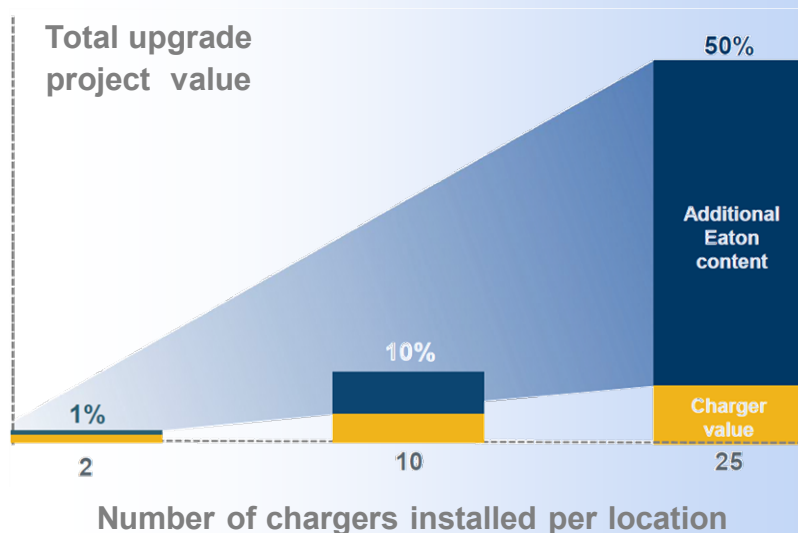


Eaton's Engineering Service capabilities across the power system lifecycle can support larger scale EVCI deployments

EVCI impact on electrical systems

When a larger number of EV chargers are installed at a site, it will result in:

- Larger power distribution modifications
- More energy storage
- More sophisticated control software



Field Services

Eaton has a national footprint of field service capabilities that provide a broad range of engineering services extending from pre-sale to site commissioning to ongoing maintenance. This team can be leveraged for several key aspects of the EVCI value chain:

- Site electrical upgrades
- Electrical installation
- Charger unit installation
- Operations and maintenance



Feasibility Studies

Eaton's team of experienced power systems engineers provide feasibility studies for building the most capable and efficient power management system, while also addressing financial factors. Feasibility studies for distributed energy resource systems (microgrid) and EVCI installations help our customers:

- Evaluate the economics of design and integration
- Provide preliminary sizing and components
- Understand the impact on reliability & resiliency




Turnkey project capabilities

In larger deployments, considerable power distribution equipment upgrades will be required to support EVCI. Eaton's team of project engineers can manage your electrical system upgrades and modernization project from end to end:

- Design, engineering and consulting
- System design
- Project management
- Cost effective solutions

Count on us for your complete Electric Vehicle charging infrastructure solution



- Project management and design engineering tailored to your infrastructure needs
- A complete portfolio of products to integrate energy storage and EV charging into your power distribution architecture
- Proven service and installation capabilities
- Reduced risk as the energy market continues to transition



Powering Business Worldwide

ABM eMobility & Electrical Infrastructure



Capabilities & Experience

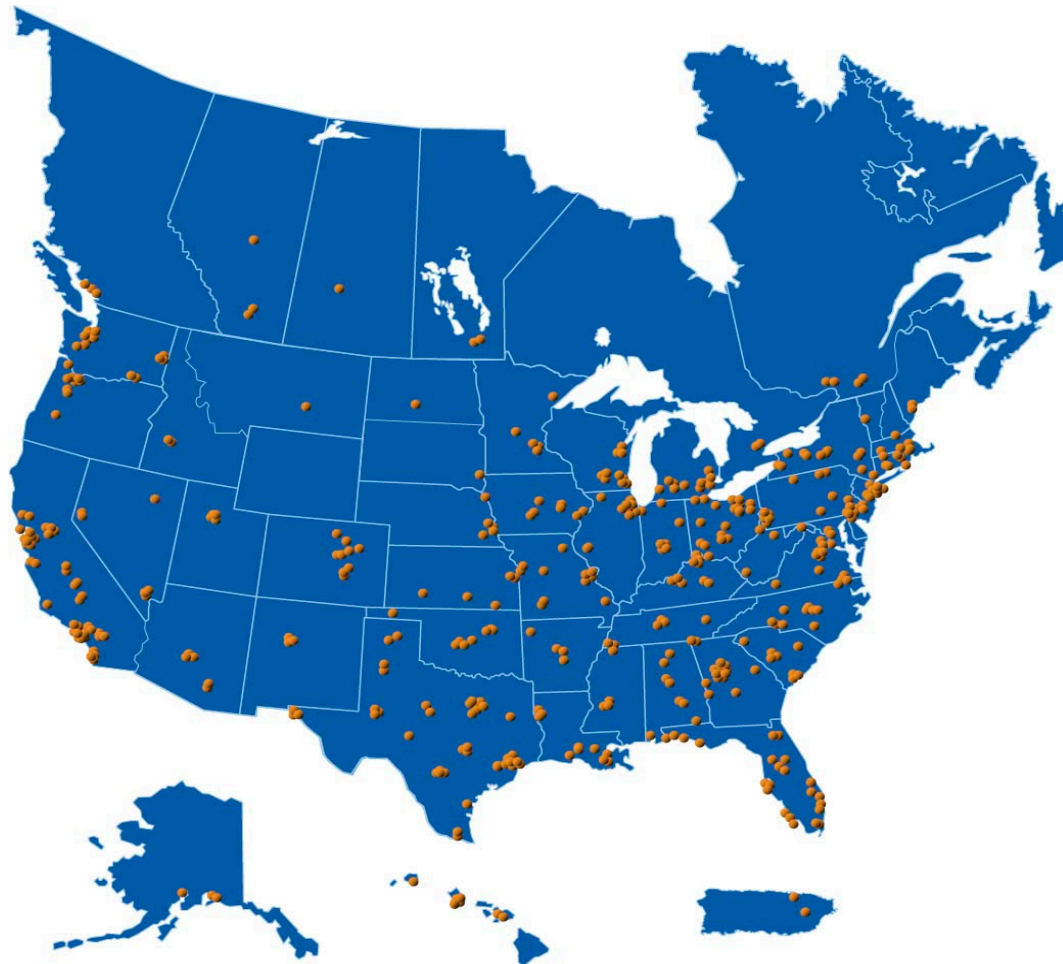
- 26,000 charging stations installed
- 10 years charging experience
- More than 40 manufacturers (charging stations and networks)
- 12 brands available on our BPA
- Equipment and software specification experts
- Turnkey installation
- Experienced Federal Contractor with extensive background in existing/operating facilities



ABM

EXCELLENCE, FOR MORE
THAN 100 YEARS

- **350+** office locations nationwide
- **125,000+** employees
- 7B NYSE company
- Experienced local management
- Skilled service teams
- Personalized service





CLIENTS

CHARGING EQUIPMENT

ABB

 **BOSCH**

-chargepoint+

 **DELTA**


EVgo

EAT•N

 **efacec**

EVBOX

 **juice bar**


eMotorWerks
SMART CHARGING

 **EVSE**

 **AddENERGIE**
Solutions to recharge | Smart Charging Solutions

noodoe

 **innogy**

 **TRITIUM**

NOVVE

UV-EYE

 **Guidehouse**


ies
Beyond Charging

SIEMENS

 **SemaConnect**

blink

enel x


AeroVironment™

 **FREEWIRE**

BTCPower

 **powerflex**
EDF renewables

 **CLIPPERCREEK**
RELIABLE. POWERFUL. MADE IN AMERICA.

 **greenlots**
A Member of the Shell Group

Wattzilla



CLIENTS



Equipment Education

How Quickly Can We Recharge Vehicles?

LEVEL 1 – AC

2 - 4 MPH

Standard Home Outlet



LEVEL 2 – AC

20 - 80 MPH

Destination / Workplace

Residential

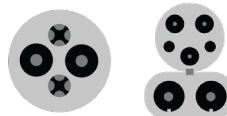


LEVEL 3 - DC FAST CHARGE / LEVEL 4

Low-Mid Power DC

90 - 180 MPH

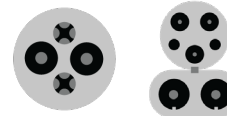
Fleets / Depot /
Dealerships



High Power DC

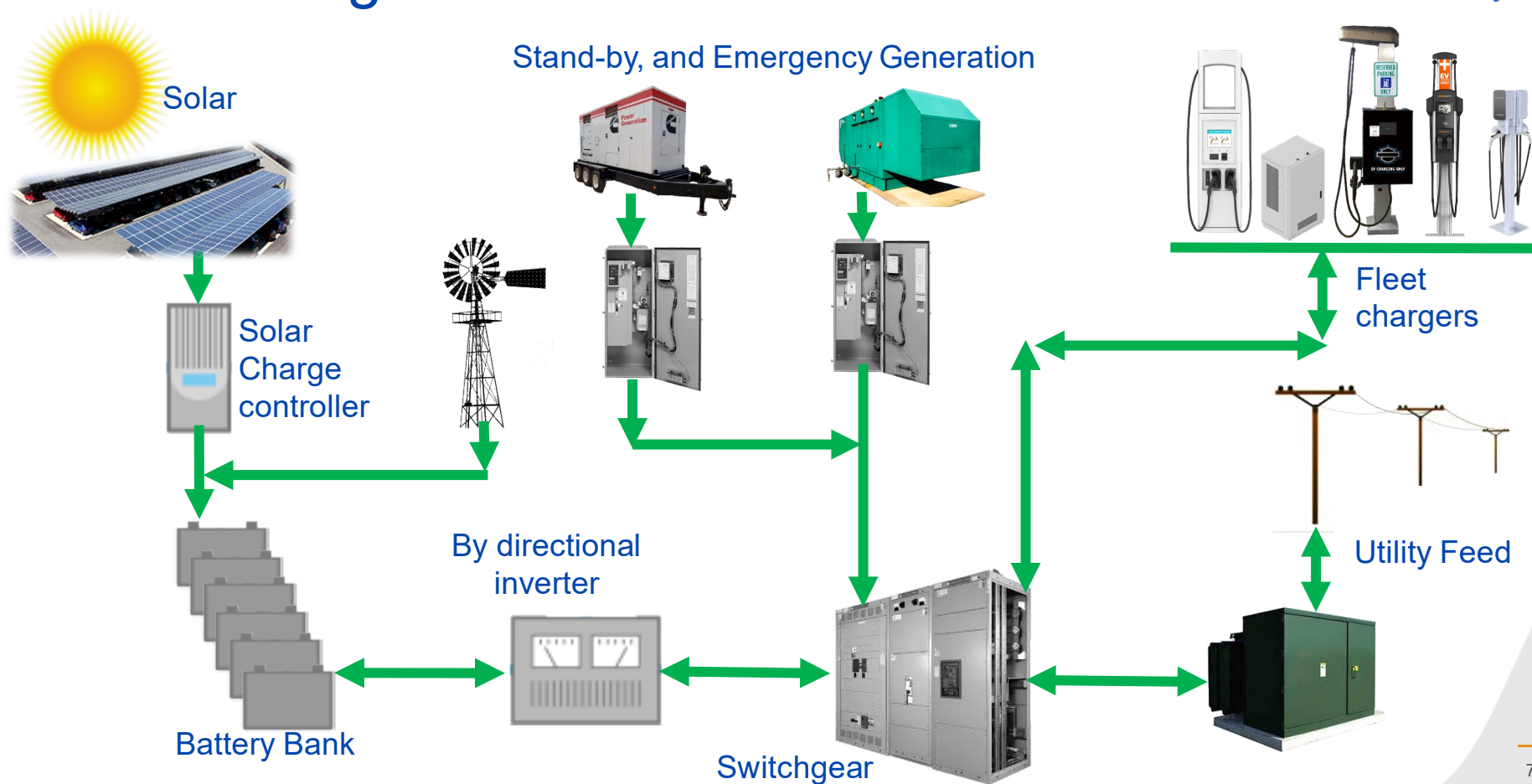
180 - 1000 MPH

Long Distance Corridors
for Traveling



** Dependent on Vehicle Capabilities and Plug Type **

EV Site design considerations





SMART PARKING

- **\$23M Contract Value**
- Installed 1,200+ monetized chargers
- Power management system reduces expenses

EV CHARGING

- Integrated with gate access system
- Wayfinding
- Parking reservations

SYSTEM INTEGRATION

- 10-30% off network fees
- Single credit card transaction fee
- Single ticket for EV & Parking charges

LAWA is the largest integrated EV installation of any US airport.



ABM *Vantage*

Contract Scope:

- Williamsburg Plaza
 - One (1) ABB Pantograph Charger – 300 KW
- Herkimer
 - Fourteen (14) ABB Pantograph Chargers
 - Qty 1 - 50 KW
 - Qty 3 – 300 KW
 - Qty 12 – 150KW
- Kingsbridge
 - Ten (10) Siemens Pantograph Chargers
 - Qty 1 – 50 KW
 - Qty 2 – 300 KW
 - Qty 8 – 150 KW

Part of NYC MTA's plan to upgrade its facilities to support commitment to purchase only electric buses starting 2028 and to have all-electric bus fleet (5,800) by 2040

Siemens and ABB Power Manage Software to monitor and control Pantograph Chargers

SLA agreements for ongoing service and Maintenance Operations





Thank You

ABM | Technical Solutions

Thomas Wray, Federal Energy Solutions

(949) 202-9587 thomas.wray@abm.com



Ameresco's EVSE BPA Offerings

Products & Services



[ameresco.com](https://www.ameresco.com)

© 2022 Ameresco, Inc. All rights reserved.

About Ameresco

Ameresco, Inc. (NYSE:AMRC) is a leading cleantech integrator and renewable energy asset developer, owner and operator.

Founded in 2000 | Public in 2010



Comprehensive Portfolio

Objective approach and in-house technical expertise delivers the most advanced technologies to meet the unique needs of each customer. Majority of projects are budget-neutral, funded by energy cost savings.

Customer Driven

Federal Government, Public Sector, Higher Ed, K12, Healthcare, Manufacturing & Commercial Services, Housing & Community Development, Transportation, and Utilities. Market reputation across North America & Europe for excellence in customer satisfaction.



\$11+ Billion in energy solution projects, 340+ MWe of Owned Assets in Operation



8,000+ Customers benefitting from energy efficiency measures and renewable energy generation



1,000+ Employees throughout United States, Canada, UK and Europe



Up to 45% Energy cost savings with comprehensive, audit- based improvements



60+ Offices providing local expertise in markets served



In 2021, our renewable energy assets and customer projects delivered a carbon offset equivalent to **~13.6M metric tons of CO₂**

Level 2 (L2) Hardware Offering



- BTC Power
- OCPP 1.6 compliant
 - Provides software supplier flexibility. OCPP software downloaded over the air and one onsite visit to replace SIM card
- Pedestal and Wall Mount Option
- 25ft cord length
- Supports RFID and Credit Card
- 240/208 VAC, 30A Load – 7.2kW output
- 240/208 VAC, 70A Load – 16.8kW output
- 2-year manufactures warranty
- Energy Star Certified



ABB



BTCPOWER

DC Fast Charging Hardware Offering

Chargers bypass slower on-board chargers providing DC power directly to the battery, greatly increasing the charging speed. Ideal for high mileage, long distance driving vehicles with brief dwell periods.

- OCPP 1.6 compliant
- Floor, Pedestal and Wall Mount Option
- CCS1/CHAdeMO connectors
- 20-25ft cord length
- Payment methods - RFID, Credit Card, QR Code, ISO 15118 (optional)
- Input Current – 3-Phase, 480V, 198-264A
- Output Rating – 150-350kW
- 2-year manufactures warranty
- UL Certified

Network Plans & Data Offering

	Operate	Optimize
Access		
Station access control	✓	✓
iOS/Android mobile app for drivers	✓	✓
24/7 driver support via the app and phone	✓	✓
Live station status view on PlugShare	✓	✓
OCPP: Open & Flexible Standards Protocol	✓	✓
OCPI: Roaming Between Network Providers	✓	✓
Guest access		✓
Code of Conduct development		✓
Snitching (station misuse reporting)		✓
Access control by organizational hierarchy		✓
Pricing		
Charge price control	✓	✓
Pricing policy development and consultation		✓
Price benchmarking reports		✓
Consultation to improve station use and profitability		✓
Performance		
Dashboard view of station activity	✓	✓
Station health reports	✓	✓
Station use, performance, and sustainability reports	✓	✓
Personal station usage and transaction reports for drivers	✓	✓
In-dashboard trouble ticket management	✓	✓
Technical phone support		✓
Proactive station health monitoring		✓
Load balancing		✓
Custom, quarterly reports tracking charging KPIs		✓
Quarterly review with your Client Success Manager		✓

- EV Connect Operate Software
 - 1, 3 and 5 Year
 - Level 2
- EV Connect Optimize Software
 - 1, 3 and 5 Year
 - Level 2 and DCFC

evconnect

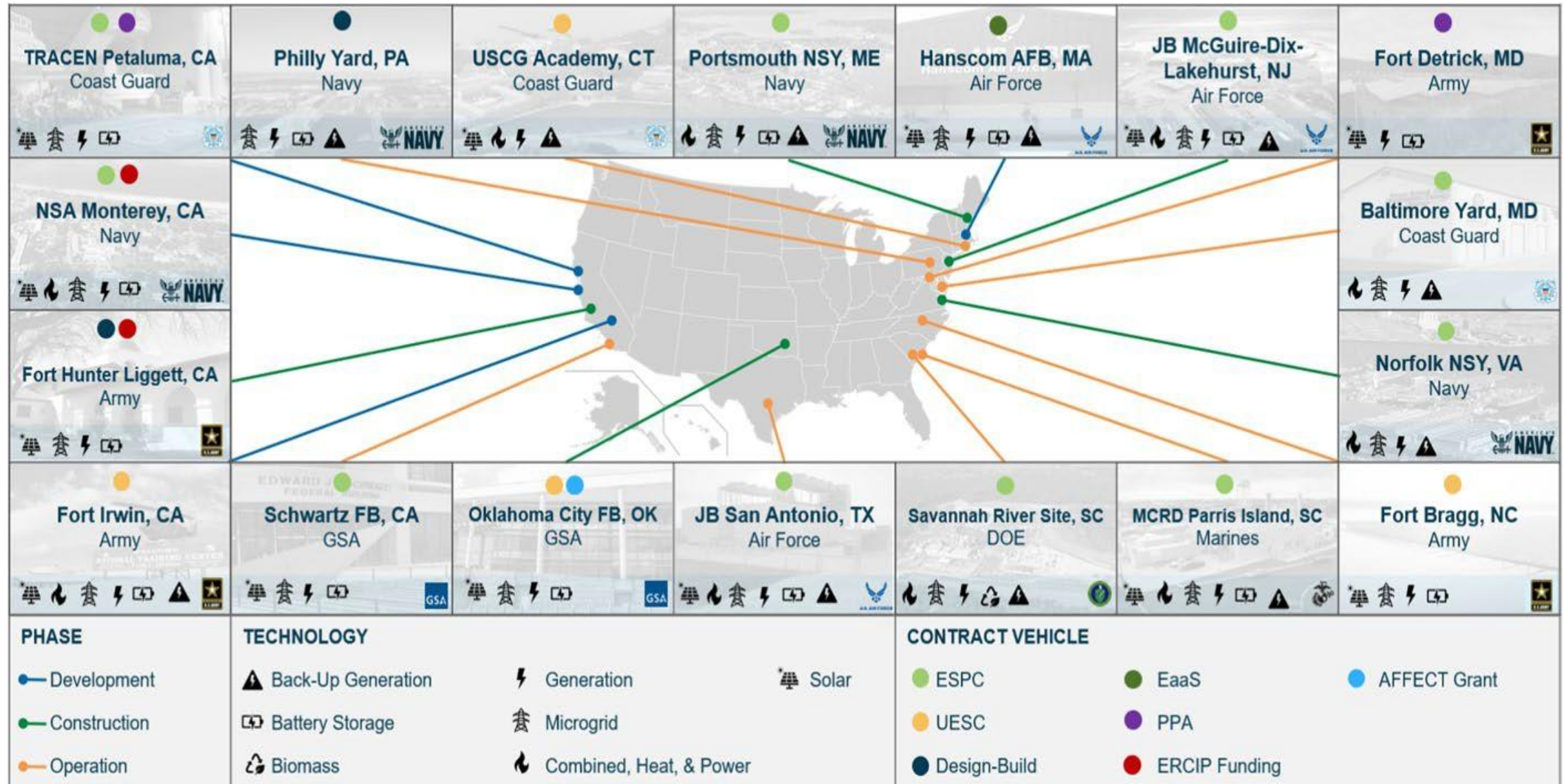


Planning and Ancillary Services

A traditional viewpoint sees EVSE as a transportation concern, and this limited mindset dictates that EV charging comes at a high cost, relative to the potential benefits.

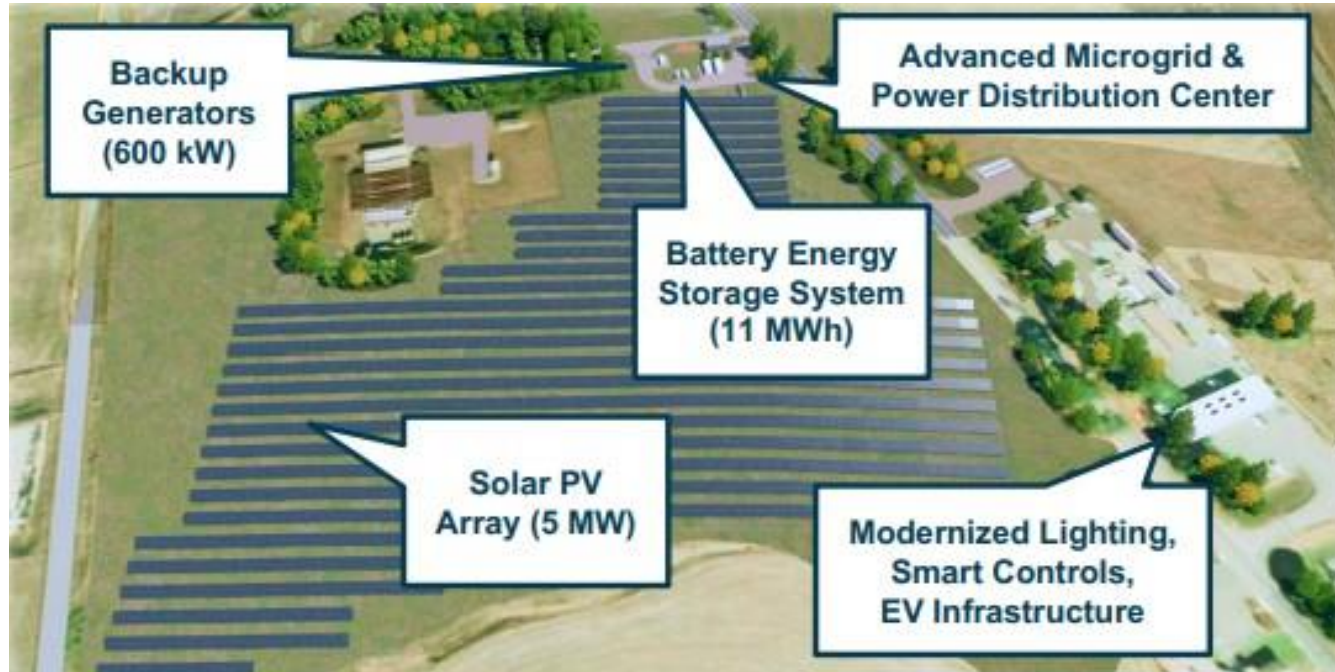
- **EVSE Site Assessment**
 - Determine existing electrical capacity, identify location of distribution or service lines and the required power supply for the type and quantity of charging stations as well as optimal EVSE layout
- **Solar Station Site Assessment**
 - Completed over 45K (kW-DC) on the Federal level
- **Utility Coordination**
 - Engagement early and often with a master planning framework
- **Permitting & Inspection**
- **Electrical Plan Development**
- **Electrical Wiring & Panel Upgrade**
- **Consulting Services**
 - We are both vendor and technology agnostic, resulting in an unbiased evaluation of charging, energy and implementation strategies

Active Ameresco Federal Resiliency Projects



Resilient Energy Solution

US Coast Guard Training Center, Petaluma, CA



Ameresco developed a \$43M Energy Savings Performance Contract (ESPC) with the U.S. Coast Guard (USCG) at its largest west coast training facility, Training Center (TRACEN) Petaluma. It is USCG's first Battery Energy Storage System (BESS) project and the Department of Homeland Security's (DHS) largest solar renewable energy project integrated within the USCG's first fully functional, renewable energy-powered microgrid.

Project Highlights

Technology / Contracting:

Microgrid Controls, HVAC, EV Charging Infrastructure, Solar, LED Lighting, Smart Building Controls, Energy Savings Performance Contract (ESPC)

LED Fixtures Installed:

8,000

Solar PV System:

5 MW

Battery Energy Storage System:

11.6M MWh

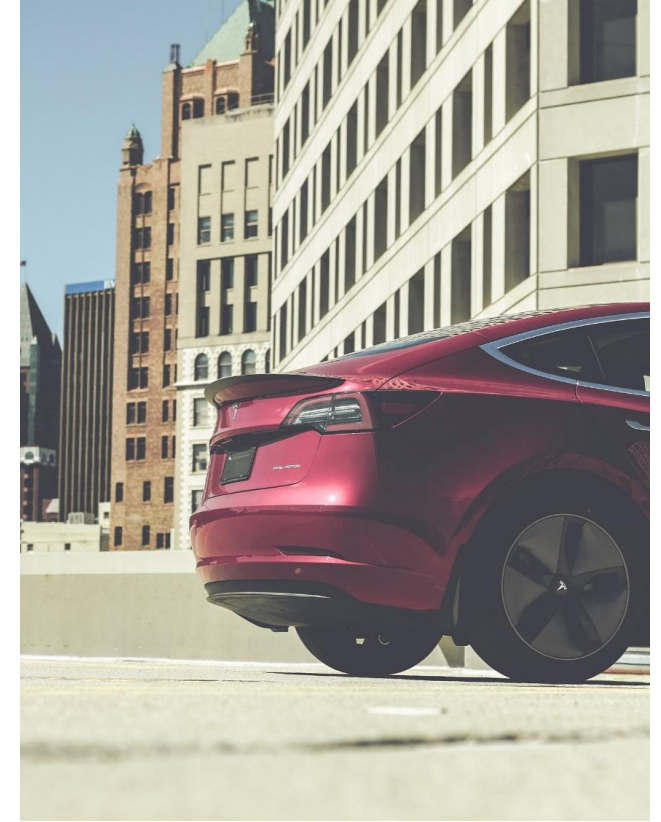
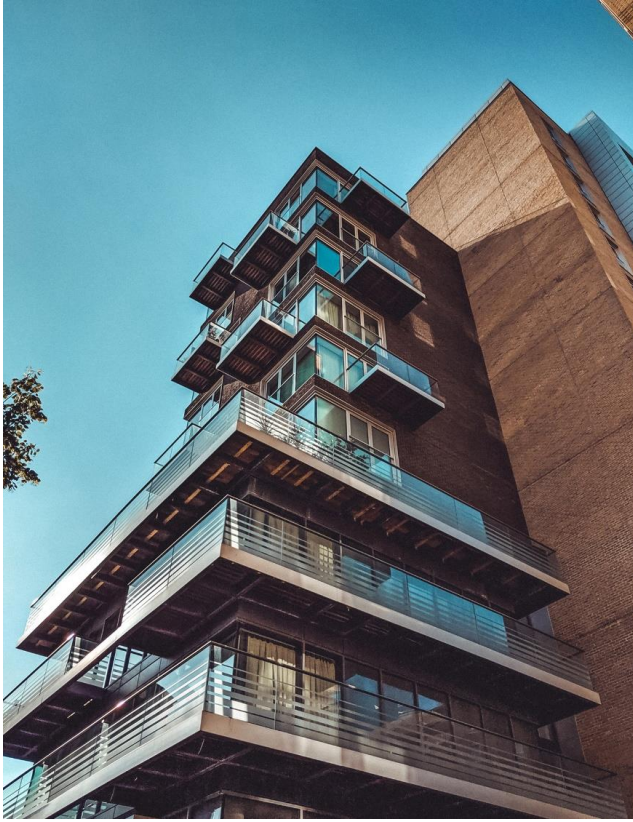
Annual Energy Savings:

\$1.2M

Thank You!

Ameresco, Inc.
111 Speen Street
Framingham, MA 01701

1-866-AMERESCO
ameresco.com



Powering What's Next

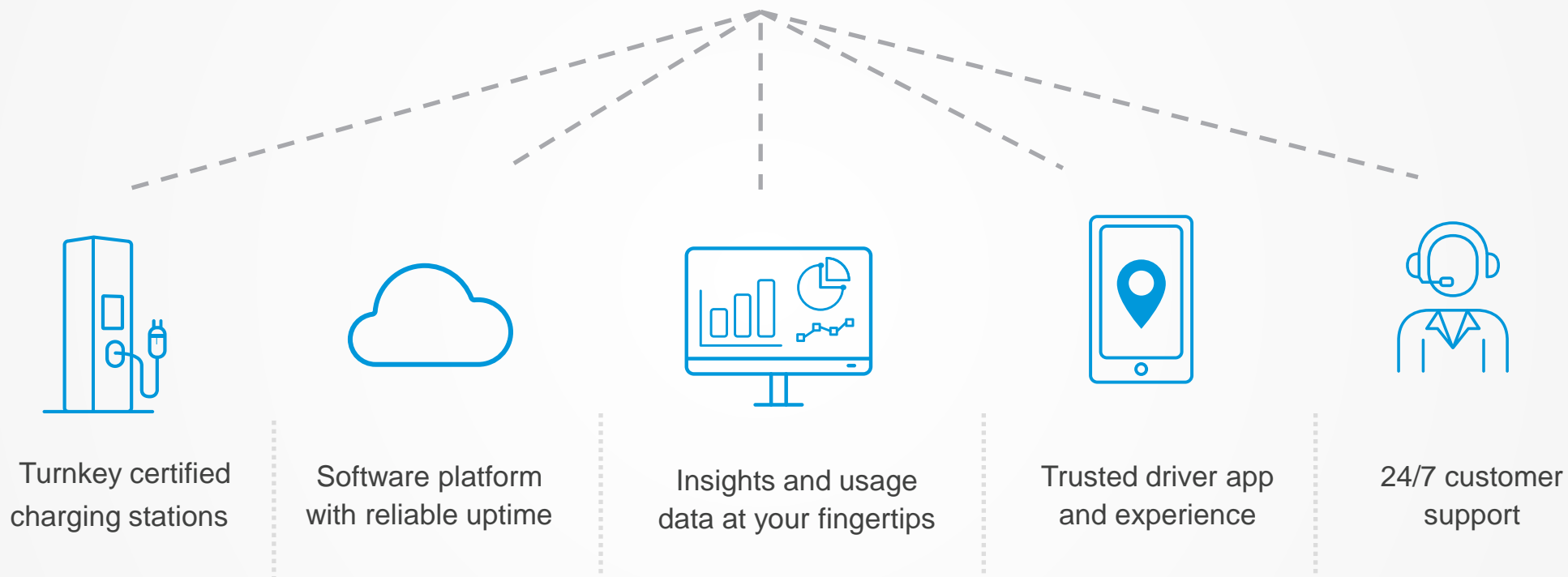
Modern EV Charging Management

evconnect



evconnect

Modern EV Charging Management



EV Connect Network: Data & Reporting

✓ Session/Transaction Data

- Location/station
- Driver
- Vehicle information
- Session start and end date/time
- Connector type
- Charge duration
- Connected duration
- Energy delivered (kwh)
- Peak demand (kw) during session
- Avg demand (kw) during session
- DR event called/participated
- Payment amount
- Total charge sessions by day of week and time of day
- Avg energy (kwh) delivered per charge session
- Avg charge duration per session
- Avg connected duration per session

✓ Interval Data (Session data broken down into 15-minute increments)

- Energy delivered (kwh) during each interval
- Average power (kw) during each interval
- Peak demand (kw) during each interval
- Average demand (kw) during each interval
- Minimum demand (kw) during each interval

✓ Utilization

- Sessions by day of week / time of day
- Energy use
- Charge time
- Connected time
- Utilization rate

✓ Revenue

- Daily revenue
- Revenue per session
- Revenue per driver

✓ Sustainability Metrics

- Greenhouse gas prevented
- Gasoline saved
- Electric miles provided
- Carbon offsets
- Equivalent trees planted

✓ Station Details

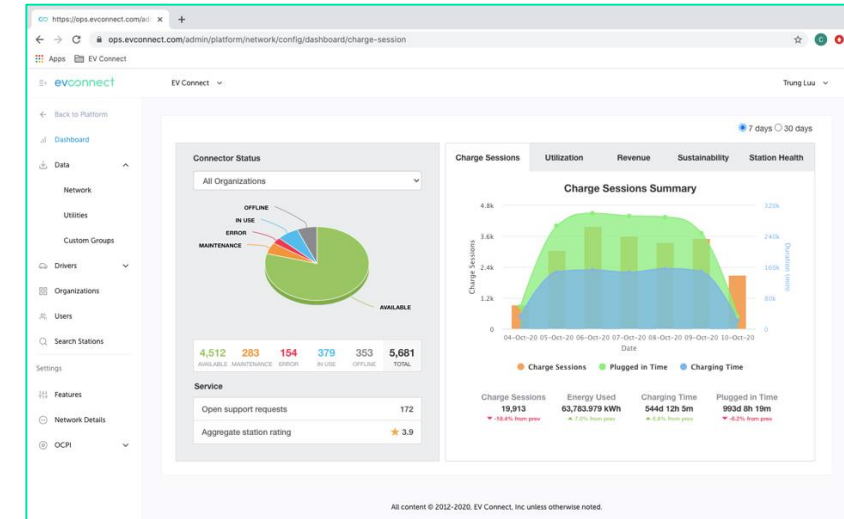
- Location ID
- Port ID
- Connector ID
- Manufacturer
- Model Number
- Connector Output Watts
- Connector Output Amperes
- Connector Output Volts
- Connector Type
- Station Port Power Level
- QR Code

✓ Location Details

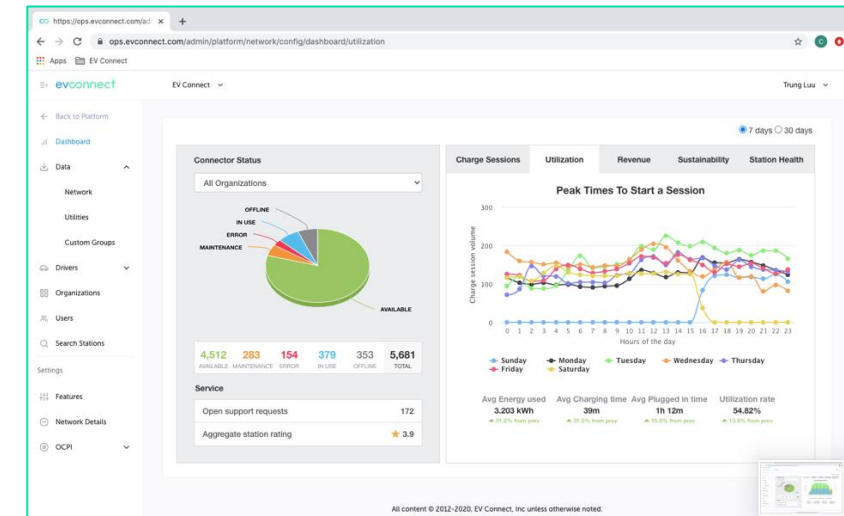
- Latitude
- Longitude
- Street Address
- City
- State
- Country Code
- Zip Code
- Segment – Business Type (e.g. retail, MUD, workplace)
- Segment – Site Type (e.g. corridor, destination)

✓ Driver Details

- First name
- Last name
- Email
- Phone number
- Zip code



Charge Station Summary



Utilization

Pricing & Payment

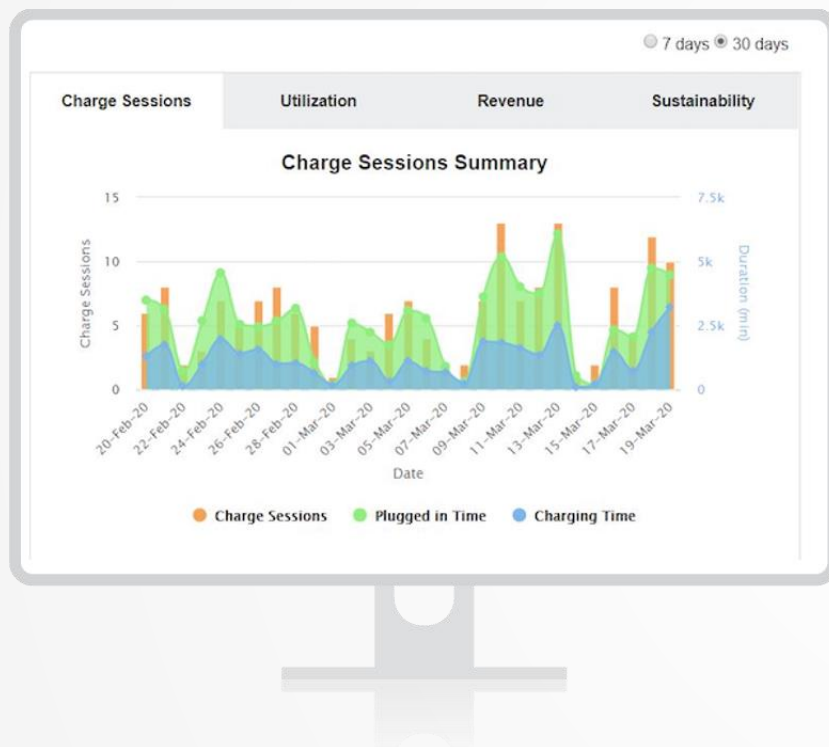
- Control access to charging stations to an unlimited amount of specified driver groups
- Flexible pricing module enabling pricing by kWh, charging time, or session, additional parking fees, and configuration by day, time, and station

The screenshot displays the 'Edit Pricing Policy' interface in the EV Connect system. The browser address bar shows the URL: `https://ops.evconnect.com/admin/platform/organizations/5b6fdf01-8a54-4e96-b1c6-bdfe0c60c6b8/tariffs/391bctf0-d8bd-474e-83db-b5ac97b4c548/edit`. The interface includes a sidebar with navigation options: Dashboard, Pricing and Plans, Pricing, Plans, Data, Organizations, Locations, Stations, Users, Settings, Support, Features, and Organization Details. The main content area is titled 'PRICING POLICIES > Edit Pricing Policy' and shows a 'Monday-Friday Policy' configuration. Under 'HOW DRIVERS SEE YOUR POLICY', the 'Energy Delivered Rate' is set to '\$0.36/kWh' and the 'Idle Parking Time Rate' is '\$10.00/hr parked'. The 'Name' field is 'Monday-Friday Policy' and the 'Custom Description' is '\$.36 per kWh until full charged then \$10/hour with a 30 min grace period'. There is a checkbox for 'Only display custom description to drivers'. The 'METERED BY ENERGY DELIVERED' section shows a 'Fee' of '0.36' per kWh delivered to vehicle. Below this are buttons for '+ Session duration', '+ Energy consumed', '+ Day Of week', and '+ Time of day'. The 'METERED BY PARKING TIME' section shows a 'Fee' of '10' per hour parked after vehicle stops charging. Below this are buttons for '+ Grace period', '+ Day Of week', and '+ Time of day'. At the bottom are 'Cancel' and 'Save Changes' buttons.

Payment Options

- ✓ Multiple payment options including Mobile App (credit card, Apple Pay, Google Pay, PayPal), credit card readers, RFID, and GSA SmartPay Fleet payments
- ✓ Multiple payment gateway integrations including Braintree, Heartland, and Tsys
- ✓ Payment processing is done via Braintree, a PayPal company, and is Payment Card Industry (PCI) compliant and follows Data Security Standards (DSS).





Modern EV Charging Management

Industry Standard for Trusted Reliability

- Leading software uptime for station performance
- Certification program for hardware station vendors
- 24/7 Networks Operation Center
- Global deployments across multiple charging requirements

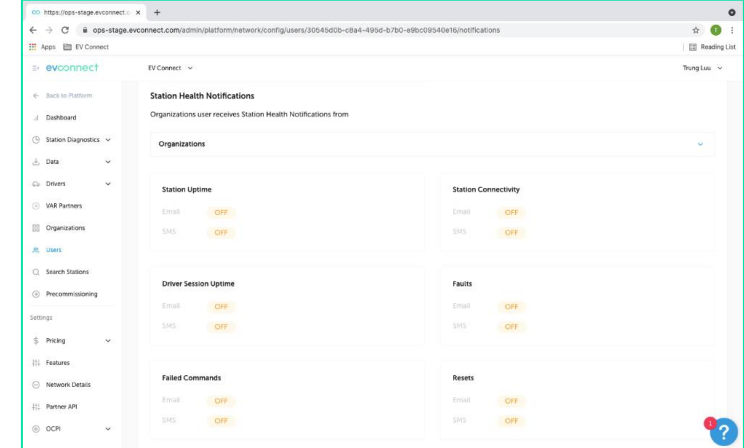
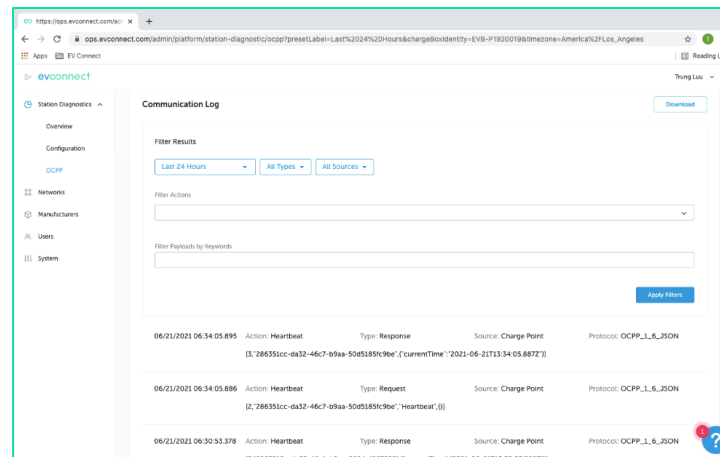
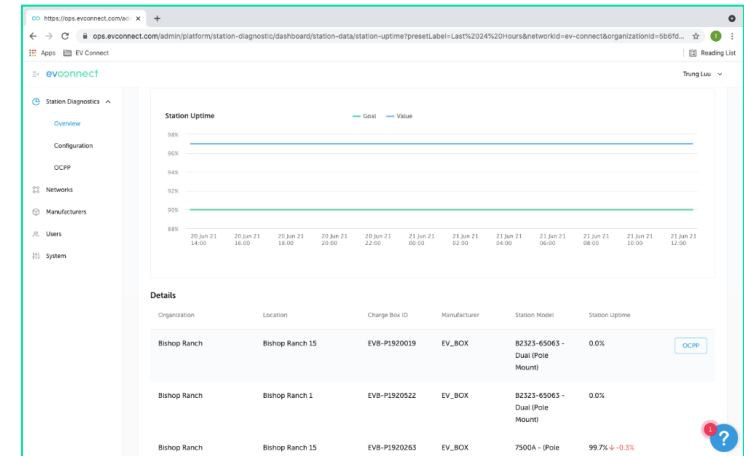
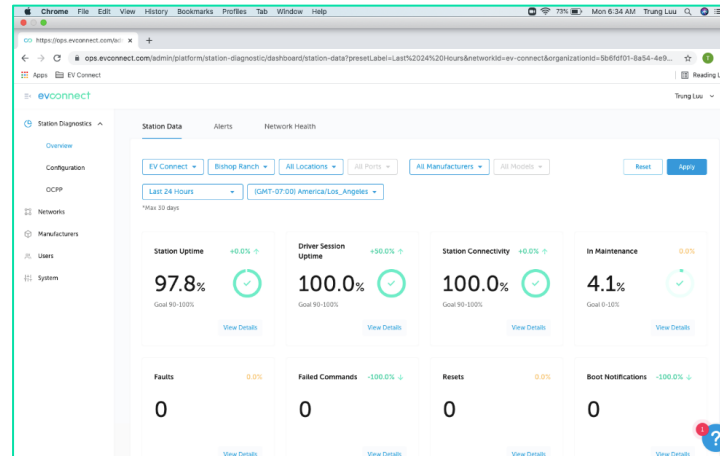
Uptime & Monitoring (C-NOC)

C-NOC Features:

- ✓ Real-time station health metrics with easy-to-view red/yellow/green indicators to identify network issues quickly
- ✓ Ability to drill down by organization, location manufacturer, station model, and date to slice-and-dice and see trends
- ✓ Ability to access OCPP logs and fault codes for troubleshooting
- ✓ Station alerts & notifications on all metrics

Uptime

- ✓ Average annual uptime is above 98%



Resources

EV Charging Station Infrastructure

Level-1 Charging 110V/120V



NEMA 15

- J1772 is standard
- 4-6 miles per hour charge time
- \$0-\$3K

Level-2 Charging 208V/240V



J1772

- J1772 is standard (Tesla's come with adapter)
- 10-20 miles per hour charge time
- \$500-\$12,000

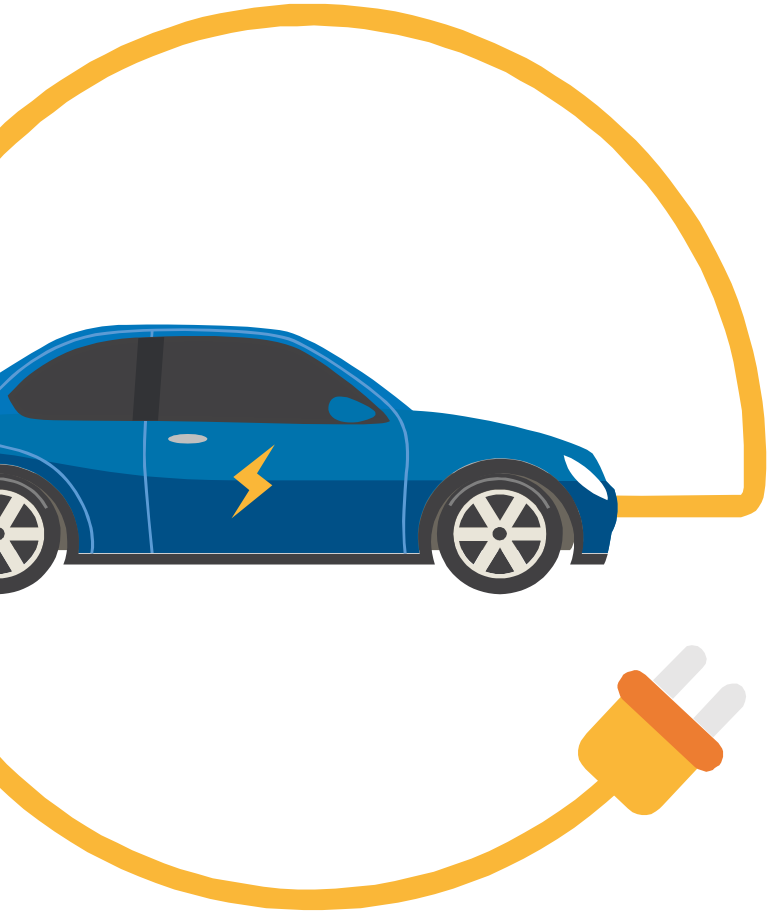
DC Fast Charger 208V/480V



Tesla, SAE Combo, CHAdeMO

- Most vehicles use CCS (Tesla comes with adapter) Nissan Leaf uses CHAdeMO
- 50-90 miles in 30 minutes
- \$32,000+

- Finding a charger [plugshare.com](https://www.plugshare.com) or [DOE Alternative Fueling Station Locator](https://www.doe.gov/alternative-fueling-station-locator)
- Sites like [abetterrouteplanner.com](https://www.abetterrouteplanner.com) help you plan for charging on trips



Future Events

In-person customer vendor meetings

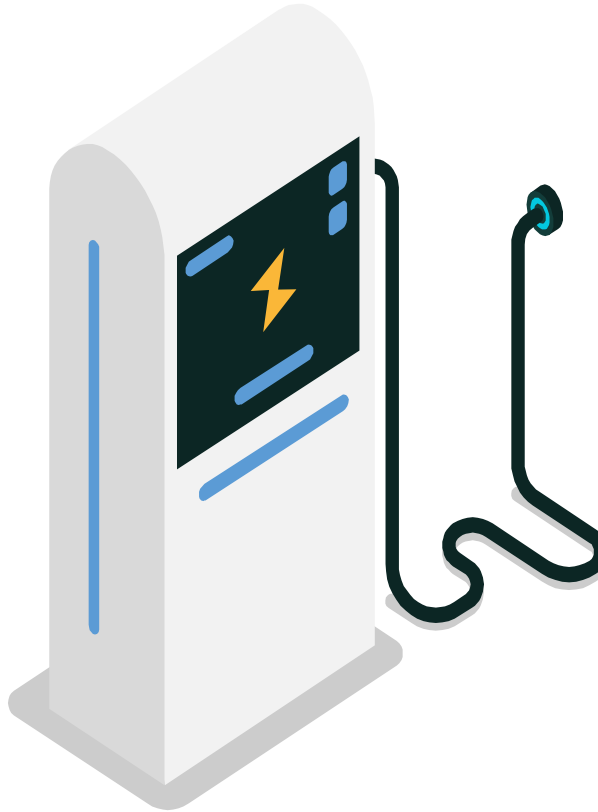
- October 4th 2022, in-person **Customer / EVSE-Vendor Day** at GSA's Headquarters at 1800 F Street in Washington, DC!
- **FedFleet 2023**
- Ideas? Let us know!

Resources

EVSE Station Acquisition,
ZEVs, Planning for ZEVs and
other general EVSE resources



Local GSA Fleet Management
Center at gsa.gov/fsr or
GSA Fleet ZEV Team at
gsafleetafvteam@gsa.gov



gsa.gov/electrifythefleet

Design & Build services, Site
Planning, Installation Assisted
Acquisition



Facility Manager
For Multi-site Locations or general
questions:
GSA Center for EV Infrastructure at
pbs-evse-solutions@gsa.gov



Thank you!

gsa.gov/electrifythefleet

gsafleetafvteam@gsa.gov



Questions?



Fleet[®]

gsafleetafvteam@gsa.gov